



ROJONE[®]
PTY. LTD.



***Military Circular Connectors
MIL-C-38999 Series***



MILITARY CIRCULAR CONNECTORS

MIL-C-38999 SERIES

Rev. 04 Date: 12/06/2013

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Introduction

Rojone is a well-equipped, professional and progressive Australian owned & operated company. Established in 1981, today we occupy our own 2100-plus square metre office, store and production facility at Ingleburn, south of Sydney.

Our Production is equipped with dedicated test instruments, Vector Network & Spectrum Analysers (HP8720D, HP8753B, 8495E), a Thermoline Thermal Chamber for temperature cycling cables, auxiliary items such as precision 3 Schleuniger 207 and their latest CS5400 cable stripping machine, inspection microscopes, pin depth gauges, intermodulation equipment, and automated test software.

Our strength is in our commitment to service. We provide quality products through unique arrangements with leading component manufacturers and through the dedication of our manufacturing team and technical staff who take pride in a job well done.

Rojone Pty. Limited maintains a Quality System compliant to the ISO9001 Standard. Rojone is third party Accredited by the Military and a number of military subcontractors and major OEM customers.

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MIL-C-38999 Series 1, 2, 3 & 4

The D38999 Series of connectors were designed for both performance and mechanical robustness to meet many demanding applications in:

- Military Aerospace
- Ballistic Missiles and Weapon Systems
- Marine Equipment

Common features apply to the whole MIL-C-38999 family such as compact size and weight, common mounting cutouts, and standard insert arrangements. Contacts, crimp tools, insertion/removal tools, sealing plugs and assembly techniques are all standard across the whole MIL-C-38999 connector series.

Performance Characteristics

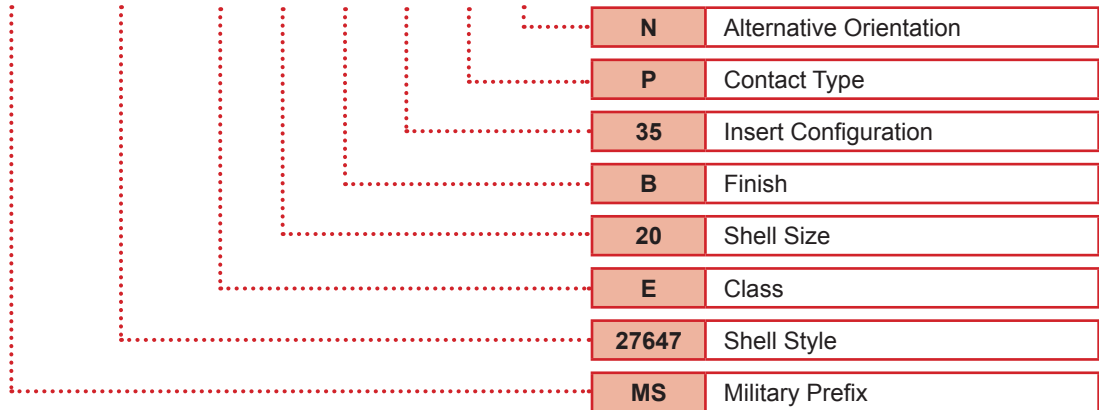
Specifications	Series 1	Series 2	Series 3	Series 4
EMI Shielding (Electroless Nickel)				
100 MHz	90 dB	65 dB	90 dB	90 dB
1,000 MHz	85 dB	45 dB	85 dB	85 dB
10,000 MHz	50 dB		65 dB	65 dB
Durability (cycles)	500	500	500	500
Shock 300 g	Yes	Yes	Yes	Yes
Humidity After Temp Life	No	No	Yes	No
Contact Engagement	0.0034"	0.034"	0.050"	0.050"
External Bending	650 in/lb max.	150 in/lb max.	1000 in/lb max.	650 inc/lb max.
Sine Vibration	3 gs 12 hrs ambient temperature with accessory load	No accessory load with temp cycle	60 gs 36 hrs ambient temperature with accessory load (-55°C to 200°C)	30 gs 12 hrs
Random Vibration Level J.44.1 Grms	Ambient temperature with accessory load	No Load ambient temp	Max rated temp with accessory load	Ambient temperature with accessory load
Firewall Option	No	No	Yes	No
Electrolytic Erosion	No	No	Yes	Yes
Scoop Proof Recessed Pin Contacts	Yes	No	Yes	Yes
Coupling Method	Bayonet	Bayonet	Screw/Threaded	Screw/Threaded
Applicable Standards	MIL-C-38999 Series 1 NFC 93422 HE308 DTAT-C-5935 GAM/T1 List	MIL-C-38999 Series 2 NFC 934222 HE309 PAN 6433-1 BS 9522-N-003 VG 96912-2 GMA/T1 List	MIL-C-38999 Series 3	MIL-C-38999 Series 4
Common Features	Keyway Polarisation - Master Keyways. Rear removable crimp contacts, retained by the insulator using metal clips.			



MIL-C-38999 Series 1

Part Number Construction

MS 27467 E 20 B 35 P N



Alternative Orientation	
N	Normal
X	A, B, C or D – see page xx for details

Contact Type	
A	Connector, less pin contacts
B	Connector, less socket contacts
C	Feed-Thru Contacts, use on MS27662 only
P	Pin Contacts, including hermetic with solder pots
S	Socket Contacts, including hermetic with solder pots
X	Pin with Eyelet (Hermetic Only)
Z	Socket with Eyelet (Hermetic Only)

Insert Configuration	
xx	See Page xx for Contact Sizes and Arrangement Codes.

Finish	
A	Bright cadmium over nickel, 150°C (Inactive for new design)
B•	Olive drab cadmium over nickel, 500 hours salt spray, 175°C
C	Non-conductive Anodise, 200°C
D•	Steel, Fused Tin, 150°C (Hermetic)
E	Stainless Steel, Passivated 200°C
F•	Electroless Nickel, 200°C
N	Stainless Steel, Electrodeposited Nickel, 200°C

Shell Size	
xx	See page xx for selection

Class	
E•	Environmental, may or may not have teeth on rear of shell. Inactive for new designs, use Class T
P	Potting, includes potting boot & short rear grommet
T•	Environmental, with teeth on rear shell, less rear hardware
Y	Hermetic

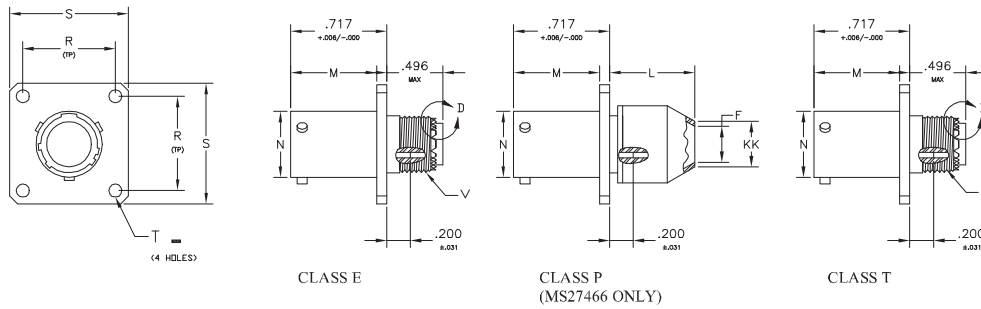
Shell Style	
27466•	Wall Mount Receptacle
27467•	Straight Plug, EMI Grounding
27468•	Jam Nut Receptacle
27469•	Hermetic Wall Mount Receptacle
27470•	Hermetic Jam Nut Receptacle
27471•	Hermetic Solder Mount Receptacle
27496•	Box Mount Receptacle
27498•*	90° Plug
27505•	Box Mount Receptacle, Rear Panel Mount
27515•*	Wall Mount Receptacle, Rear Panel Mount
27652•*	Wall Mount Receptacle
27653•*	Straight Plug, EMI Grounding
27654•*	Wall Mount Receptacle, Rear Panel Mount
27656•	Wall Mount Receptacle, Rear Panel Mount
27661	Straight Plug, Lanyard Release
27662	Thru-Bulkhead Receptacle

MS	Military Prefix
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• MIL-STD 1353
* Inactive for new design

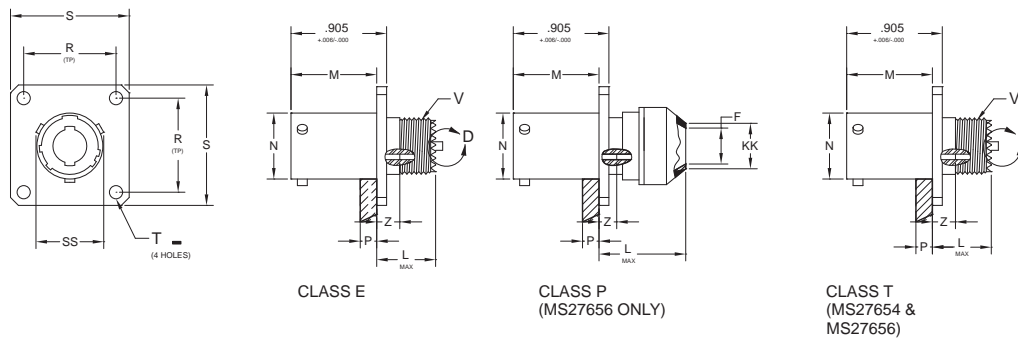
Wall Mount Receptacle, Front Panel Mt.

MS27466, MS27652



Shell Size	M	V Thread Class 2A (Plated)	N	S	R	T	F	KK	L
	-000		+001	±0.16	(TP)	Dia.	Dia.	Dia	Max
	+005		-005			.005		Max	
9	0.632	.4375-28UNEF	0.572	0.938	0.719	0.128	0.327	0.608	0.813
11	0.632	.5625-24UNEF	0.700	1.031	0.812	0.128	0.444	0.734	0.813
13	0.632	.6875-24UNEF	0.850	1.125	0.906	0.128	0.558	0.858	0.813
15	0.632	.8125-20UNEF	0.975	1.219	0.969	0.128	0.683	0.984	0.813
17	0.632	.9375-20UNEF	1.100	1.312	1.062	0.128	0.808	1.110	0.813
19	0.632	1.0625-18UNEF	1.207	1.438	1.156	0.128	0.909	1.234	0.813
21	0.602	1.1875-18UNEF	1.332	1.562	1.250	0.128	1.034	1.360	0.906
23	0.602	1.3125-18UNEF	1.457	1.688	1.375	0.147	1.159	1.484	0.906
25	0.602	1.4375-18UNEF	1.582	1.812	1.500	0.147	1.284	1.610	0.906

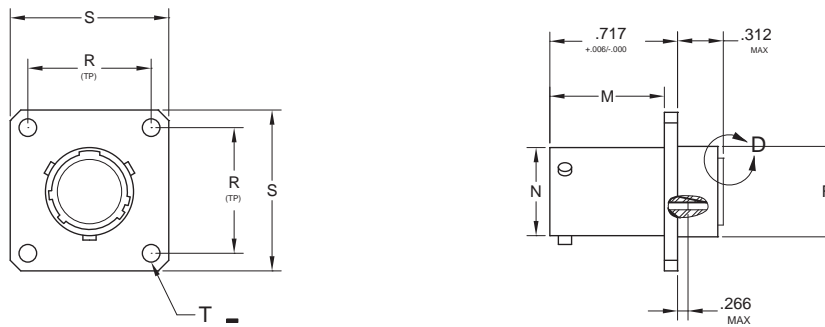
Wall Mount Receptacle, Rear Panel Mt. MS27515, MS27654, MS27656



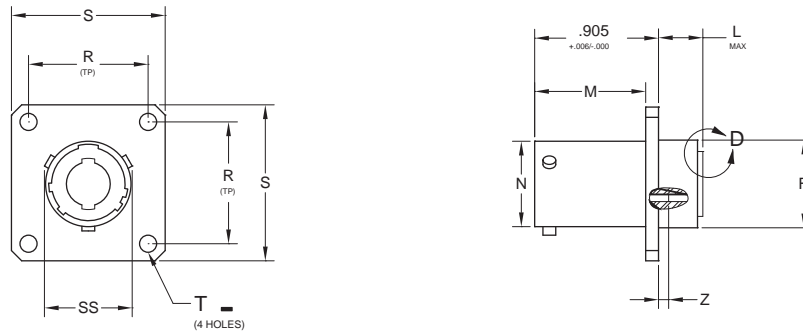
Shell Size	M	V Thread Class 2A (Plated)	N	S	R	T	F	KK	L
	-000		+001	±0.16	(TP)	Dia.	Dia.	Dia	Max
	+005		-005			.005		Max	
9	0.632	.4375-28UNEF	0.572	0.938	0.719	0.128	0.327	0.608	0.813
11	0.632	.5625-24UNEF	0.700	1.031	0.812	0.128	0.444	0.734	0.813
13	0.632	.6875-24UNEF	0.850	1.125	0.906	0.128	0.558	0.858	0.813
15	0.632	.8125-20UNEF	0.975	1.219	0.969	0.128	0.683	0.984	0.813
17	0.632	.9375-20UNEF	1.100	1.312	1.062	0.128	0.808	1.110	0.813
19	0.632	1.0625-18UNEF	1.207	1.438	1.156	0.128	0.909	1.234	0.813
21	0.602	1.1875-18UNEF	1.332	1.562	1.250	0.128	1.034	1.360	0.906
23	0.602	1.3125-18UNEF	1.457	1.688	1.375	0.147	1.159	1.484	0.906
25	0.602	1.4375-18UNEF	1.582	1.812	1.500	0.147	1.284	1.610	0.906



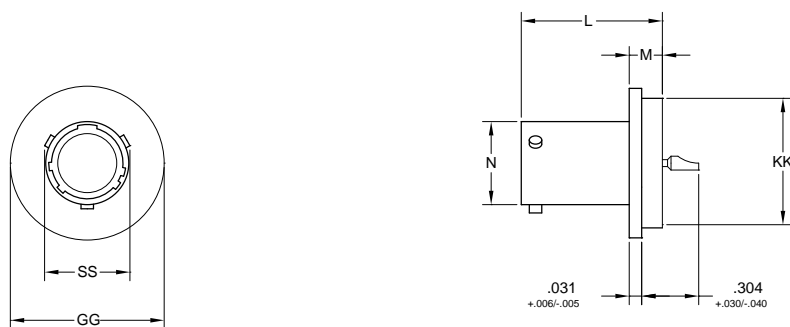
Shell Size	N	R	S	RR	T
	Dia. 0.001 -0.005	(TP)	±.016	Thread Class 2A	Dia. ±.005
9	0.572	0.719	0.938	.6875-24UNEF	0.128
11	0.700	0.812	1.031	.8125-20UNEF	0.128
13	0.850	0.906	1.125	.9375-20UNEF	0.128
15	0.975	0.969	1.219	1.0625-18UNEF	0.128
17	1.100	1.062	1.312	1.1875-18UNEF	0.128
19	1.207	1.156	1.438	1.3125-18UNEF	0.128
21	1.332	1.250	1.562	1.4375-18UNEF	0.128
23	1.457	1.375	1.688	1.5625-18UNEF	0.147
25	1.582	1.500	1.812	1.6875-18UNEF	0.147



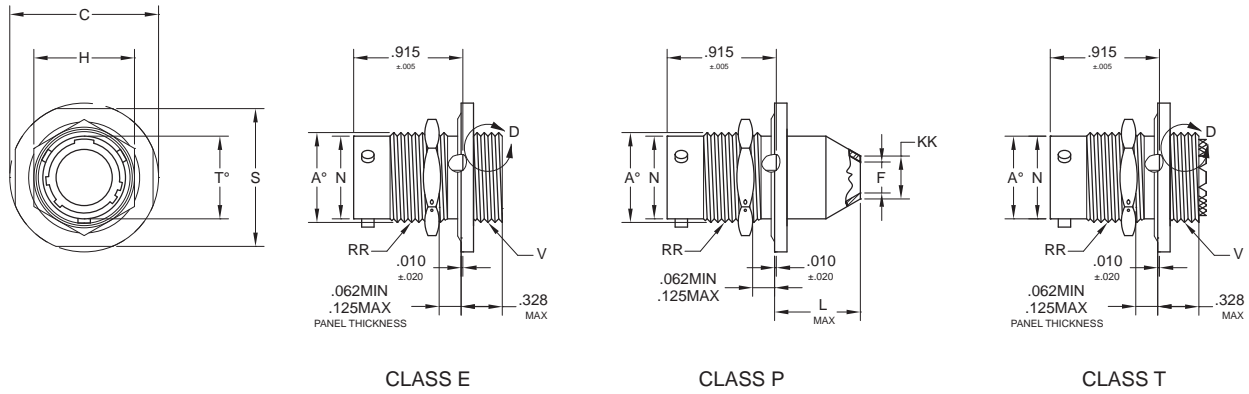
Shell Size	M	N	S	R	T	F
	+ .000 - .005	+ .001 - .005	±.016	(TP)	Dia ±.005	Dia Max
9	0.632	0.572	0.938	0.719	0.128	0.469
11	0.632	0.700	1.031	0.812	0.128	0.594
13	0.632	0.850	1.125	0.906	0.128	0.719
15	0.632	0.975	1.219	0.969	0.128	0.844
17	0.632	1.100	1.312	1.062	0.128	0.969
19	0.632	1.207	1.438	1.156	0.128	1.078
21	0.602	1.332	1.562	1.250	0.128	1.203
23	0.602	1.457	1.688	1.375	0.147	1.328
25	0.602	1.582	1.812	1.500	0.147	1.453



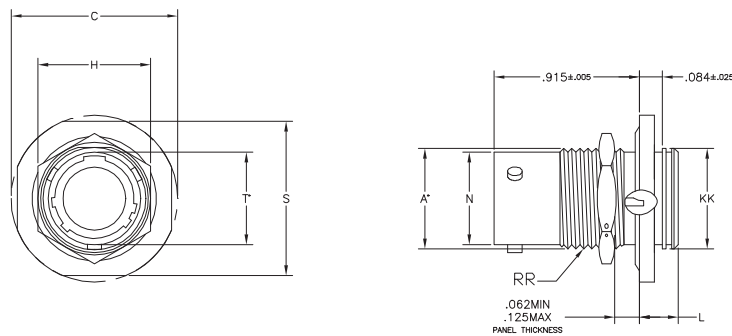
Shell Size	L	M	R	S	T	Z	N	SS	F
	Max.	0 -0.005	(TP)	0.011 -0.01	Dia. ±.005	±.031	Dia. 0.001 -0.005	Dia. 0 -0.016	Dia. Max.
9	0.219	0.820	0.719	0.938	0.128	0.207	0.572	0.662	0.547
11	0.219	0.820	0.812	1.031	0.128	0.207	0.700	0.810	0.656
13	0.219	0.820	0.906	1.125	0.128	0.207	0.850	0.960	0.828
15	0.219	0.820	0.969	1.219	0.128	0.207	0.975	1.085	0.953
17	0.219	0.820	1.062	1.312	0.128	0.207	1.100	1.210	1.078
19	0.219	0.820	1.156	1.438	0.128	0.207	1.207	1.317	1.203
21	0.250	0.790	1.250	1.562	0.128	0.328	1.332	1.442	1.328
23	0.250	0.790	1.375	1.688	0.147	0.328	1.457	1.567	1.453
25	0.250	0.790	1.500	1.812	0.147	0.328	1.582	1.692	1.578



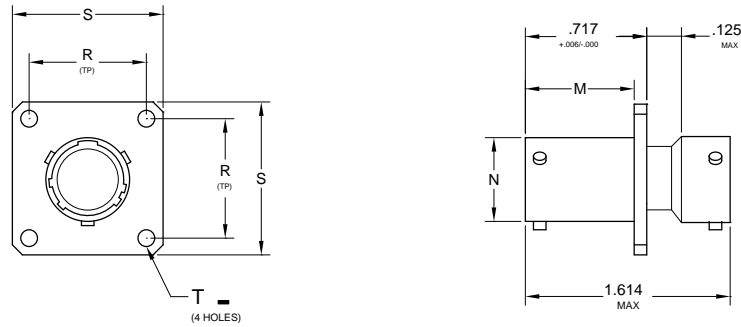
Shell Size	N	SS	L	M	GG	KK
	Dia. 0.001 -0.005	Dia. 0 -0.016	0.011 0	0.006 -0.005	Dia. 0.011 -0.01	Dia. 0.001 -0.005
9	0.572	0.662	0.789	0.125	0.750	0.672
11	0.700	0.810	0.789	0.125	0.844	0.781
13	0.850	0.960	0.789	0.125	0.969	0.906
15	0.975	1.085	0.789	0.125	1.094	1.031
17	1.100	1.210	0.789	0.125	1.218	1.156
19	1.207	1.317	0.789	0.125	1.312	1.250
21	1.332	1.442	0.789	0.125	1.438	1.375
23	1.457	1.567	0.821	0.156	1.563	1.500
25	1.582	1.692	0.821	0.156	1.688	1.625



SHELL SIZE	CLASS E				CLASS P			CLASS T			
	RR	N	A	T	C	H	S	V	KK	F	L
	THREAD CLASS 2A (PLATED)	+001 -005	+000 -010	+010 -000	MAX.	HEX +017 -016	±016	THREAD CLASS 2A (PLATED)	DIA. MAX.	DIA.	MAX.
9	.6875-24UNEF	0.572	0.669	0.697	1.199	0.875	1.062	.4375-28UNEF	0.608	0.327	0.625
11	.8125-20UNEF	0.700	0.769	0.822	1.386	1.000	1.250	.5625-24UNEF	0.734	0.444	0.625
13	1.0000-20UNEF	0.850	0.955	1.007	1.511	1.188	1.375	.6875-24UNEF	0.858	0.558	0.625
15	1.1250-18UNEF	0.975	1.084	1.134	1.636	1.312	1.500	.8125-20UNEF	0.984	0.683	0.625
17	1.2500-18UNEF	1.100	1.208	1.259	1.761	1.438	1.625	.9375-20UNEF	1.110	0.808	0.625
19	1.3750-18UNEF	1.207	1.333	1.384	1.949	1.562	1.812	1.0625-18UNEF	1.234	0.909	0.656
21	1.5000-18UNEF	1.332	1.459	1.507	2.073	1.688	1.938	1.1875-18UNEF	1.360	1.034	0.750
23	1.6250-18UNEF	1.457	1.575	1.634	2.199	1.812	2.063	1.3125-18UNEF	1.484	1.159	0.750
25	1.7500-18UNS	1.582	1.709	1.759	2.323	2.000	2.188	1.4375-18UNEF	1.610	1.284	0.750

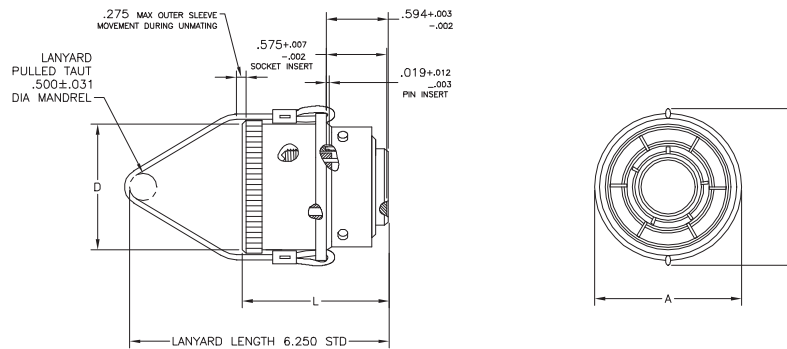


SHELL SIZE	L	KK	RR	N	A	T	C	H	S
	MAX.	+011 -000	THREAD CLASS 2A (PLATED)	+000 -005	+000 -010	+010 -000	MAX.	HEX +017 -016	±016
			D Hole Dia	D Hole Dia	D Hole Dia	D Hole Dia			
9	0.297	0.642	.6875-24UNEF	0.572	0.669	0.697	1.199	0.875	1.062
11	0.297	0.766	.8125-20UNEF	0.700	0.769	0.822	1.386	1.000	1.250
13	0.297	0.892	1.0000-20UNEF	0.850	0.955	1.007	1.511	1.188	1.375
15	0.297	1.018	1.1250-18UNEF	0.975	1.084	1.134	1.636	1.312	1.500
17	0.297	1.142	1.2500-18UNEF	1.100	1.208	1.259	1.761	1.438	1.625
19	0.328	1.268	1.3750-18UNEF	1.207	1.333	1.384	1.949	1.562	1.812
21	0.328	1.392	1.5000-18UNEF	1.332	1.459	1.507	2.073	1.688	1.938
23	0.328	1.518	1.6250-18UNEF	1.457	1.580	1.634	2.199	1.812	2.062
25	0.328	1.642	1.7500-18UNS	1.582	1.709	1.759	2.328	2.000	2.188



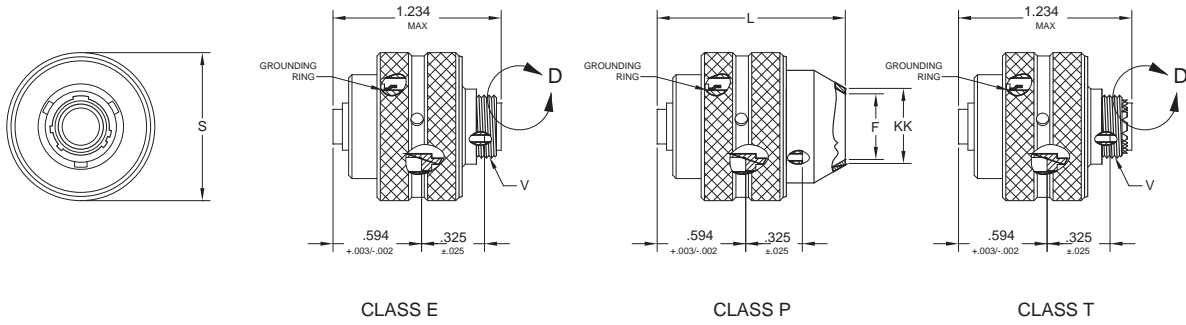
Shell Size	M	N	S	R	T
	0 -0.005	0.001 -0.005	±.016	(TP)	Dia. ±.005
9	0.632	0.572	0.938	0.719	0.128
11	0.632	0.700	1.031	0.812	0.128
13	0.632	0.850	1.125	0.906	0.128
15	0.632	0.975	1.219	0.969	0.128
17	0.632	1.100	1.312	1.062	0.128
19	0.632	1.207	1.438	1.156	0.128
21	0.602	1.332	1.562	1.250	0.128
23	0.602	1.457	1.688	1.375	0.147
25	0.602	1.582	1.812	1.500	0.147

Straight Plug, Lanyard Release

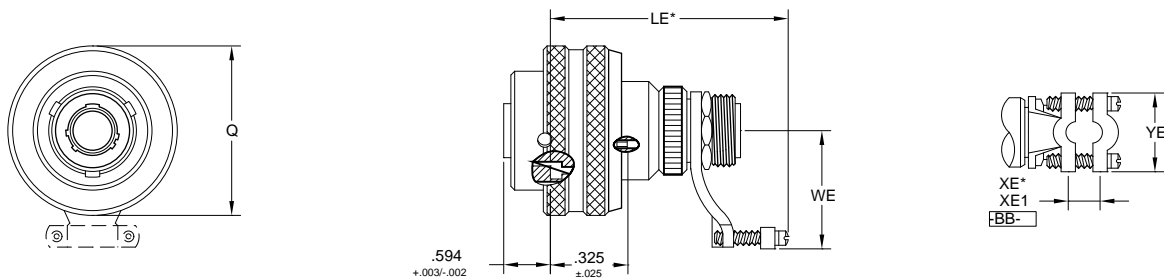


Shell Size	A	B	D	L	V
	Dia Max	Max	Max Accessory Dia	Max	Thread Class 2A UNEF (Plated)
11	1.393	1.797	0.740	1.703	.5625-24
13	1.558	1.969	0.926	1.703	.6875-24
15	1.669	2.078	1.051	1.703	.8125-20
17	1.797	2.203	1.176	1.703	.9375-20
19	1.926	2.323	1.300	1.703	1.0625-18
21	2.054	2.469	1.426	1.703	1.1875-18
23	2.183	2.594	1.551	1.703	1.3125-18
25	2.293	2.703	1.676	1.766	1.4375-18

Reference Dimensions only – subject to manufacturers’ tolerances



SHELL SIZE	L	V	Q	F	KK
	MAX.	THREAD CLASS 2A (PLATED)	MAX.	MAX.	DIA. MAX.
9	1.531	.4375-28UNEF	0.844	0.327	0.608
11	1.531	.5625-25UNEF	0.969	0.444	0.734
13	1.531	.6875-24UNEF	1.141	0.558	0.858
15	1.531	.8125-20UNEF	1.266	0.683	0.984
17	1.531	.9375-20UNEF	1.391	0.808	1.110
19	1.531	1.0625-18UNEF	1.500	0.909	1.234
21	1.625	1.1875-29UNEF	1.625	1.034	1.360
23	1.625	1.3125-18UNEF	1.750	1.159	1.484
25	1.625	1.4375-18UNEF	1.875	1.284	1.610



* DIMENSIONS LE AND XE1 ARE APPLICABLE WHEN THE END OF THE SCREW IS FLUSH WITH SURFACE BB

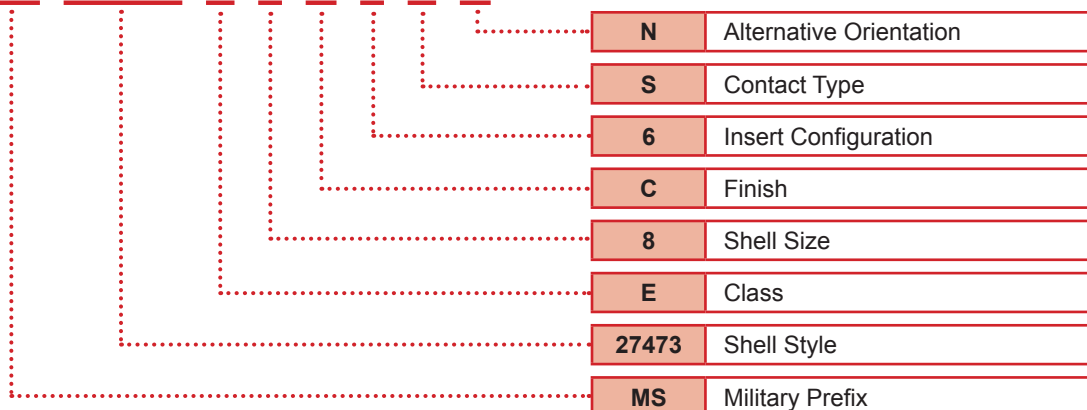
SHELL SIZE	LE	WE	XE	XE1	YE	Q
	MAX.	MAX.	MIN. CABLE	MAX. CABLE	MAX.	DIA.
9	2.344	1.000	0.082	0.234	0.828	0.875
11	2.344	1.032	0.082	0.234	0.891	0.984
13	2.406	1.094	0.114	0.328	1.016	1.156
15	2.594	1.291	0.176	0.457	1.141	1.250
17	2.641	1.281	0.238	0.634	1.255	1.406
19	2.766	1.344	0.208	0.614	1.469	1.500
21	2.844	1.375	0.302	0.698	1.550	1.625
23	3.000	1.438	0.302	0.823	1.675	1.750
25	3.291	1.719	0.332	0.853	1.800	1.875



MIL-C-38999 Series 2

Part Number Construction

MS 27473 E 8 C 6 S N



Alternative Orientation	
N	Normal
X	A, B, C or D – see page xx for details

Contact Type	
A	Connector, less pin contacts
B	Connector, less socket contacts
C	Feed-Thru Contacts, use on MS27662 only
P	Pin Contacts, including hermetic with solder pots
S	Socket Contacts, including hermetic with solder pots
X	Pin with Eyelet (Hermetic Only)
Z	Socket with Eyelet (Hermetic Only)

Insert Configuration	
xx	See Page xx for details.

Finish	
A	Bright cadmium over nickel, 150°C (Inactive for new design)
B•	Olive drab cadmium over nickel, 500 hours salt spray, 175°C
C	Non-conductive Anodise, 200°C
D•	Steel, Fused Tin, 150°C (Hermetic)
E	Stainless Steel, Passivated 200°C
F•	Electroless Nickel, 200°C
N	Stainless Steel, Electrodeposited Nickel, 200°C

Class	
E•	Environmental, may or may not have teeth on rear of shell. Inactive for new designs, use Class T
P	Potting, includes potting boot & short rear grommet
T•	Environmental, with teeth on rear shell, less rear hardware
Y	Hermetic

Shell Size	
xx	See page xx for selection

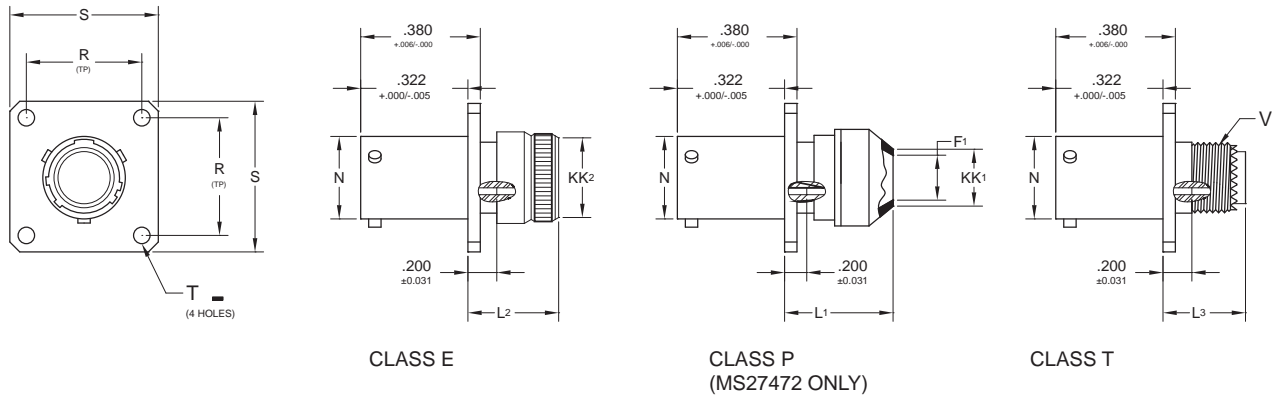
Shell Style	
27472•	Wall Mount Receptacle
27473•	Straight Plug
27474•	Jam Nut Receptacle
27475•	Hermetic Wall Mount Receptacle
27476•	Hermetic Box Mount Receptacle
27477•	Hermetic Jam Nut Receptacle
27478•	Hermetic Solder Mount Receptacle
27479*	Wall Mount Receptacle
27480*	Straight Plug
27481*	Jam Nut Receptacle
27482*	Hermetic Wall Mount Receptacle
27483*	Hermetic Jam Nut Receptacle
27484•	Straight Plug, EMI Mounting
27497•	Wall Mount Receptacle, Back Panel Mounting
27499•	Box Mount Receptacle
27500*	90° Plug
27503*	Hermetic Solder Mount Receptacle
27504*	Box Mount Receptacle
27508•	Box Mount Receptacle, Back Panel Mounting
27513•	Box Mount Receptacle, Long Grommet
27664*	Wall Mount Receptacle, Back Panel Mounting

• MIL-STD 1353
* Inactive for new design

MS	Military Prefix
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Wall Mount Receptacle, Front Panel Mt.

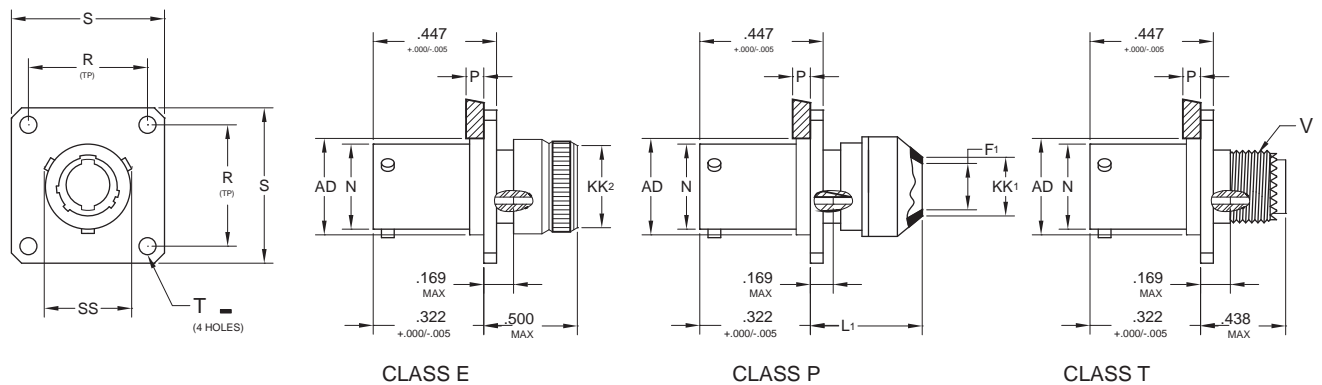
MS27472, MS27479



SHELL SIZE	F1	KK1	KK2	L1	L2	L3	R	S	T	N	V THREAD MODIFIED	
	DIA.	DIA. MAX.	DIA. MAX.	MAX.	MAX.	MAX.	(TP)	±.016	±.005	+ .001 - .005	CLASS 2A	MODIFIED MAJOR DIA.
8	0.444	0.625	0.578	0.609	0.547	0.500	0.594	0.812	0.120	0.473	.4375-28UNEF	.421-.417
10	0.558	0.750	0.703	0.609	0.547	0.500	0.719	0.938	0.120	0.590	.5625-24UNEF	.542-.538
12	0.683	0.875	0.828	0.609	0.547	0.500	0.812	1.031	0.120	0.750	.6875-24UNEF	.667-663
14	0.808	1.000	0.953	0.609	0.547	0.500	0.906	1.125	0.120	0.875	.8125-20UNEF	.791-.787
16	0.909	1.125	1.078	0.609	0.547	0.500	0.969	1.219	0.120	1.000	.9375-20UNEF	.916-.912
18	1.034	1.250	1.203	0.609	0.547	0.500	1.062	1.312	0.120	1.125	1.0625-18UNEF	1.034-1.030
20	1.159	1.375	1.328	0.609	0.547	0.500	1.156	1.438	0.120	1.250	1.1875-18UNEF	1.158-1.154
22	1.284	1.500	1.453	0.609	0.547	0.500	1.250	1.562	0.120	1.375	1.3125-18UNEF	1.283-1.279
24	1.409	1.625	1.578	0.688	0.547	0.500	1.375	1.688	0.147	1.500	1.4375-18UNEF	1.408-1.404

Wall Mount Receptacle, Back Panel Mt.

MS27664, MS27497

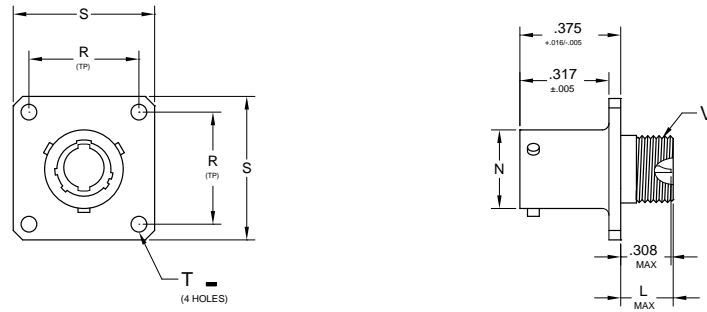


SHELL SIZE	F ¹	L ¹	N	P	R	S	T	V THREAD	AD	KK ¹	KK ²	SS
	DIA. ±.010	MAX.	DIA. + .001 - .005	MAX. PANEL THICKNESS	(TP)	±.016	DIA. ±.005	UNEF CLASS 2A (PLATED)	DIA. ±.005	DIA. MAX.	DIA. MAX.	DIA. + .000 - .016
8	0.444	0.468	0.473	0.142	0.594	0.812	0.120	.4375-28	0.516	0.625	0.578	0.563
10	0.558	0.468	0.590	0.142	0.719	0.938	0.120	.5625-24	0.633	0.750	0.703	0.680
12	0.683	0.468	0.750	0.142	0.812	1.031	0.120	.6875-24	0.802	0.875	0.828	0.859
14	0.808	0.468	0.875	0.142	0.906	1.125	0.120	.8125-20	0.927	1.000	0.953	0.984
16	0.909	0.468	1.000	0.142	0.969	1.219	0.120	.9375-20	1.052	1.125	1.078	1.108
18	1.034	0.468	1.125	0.142	1.062	1.312	0.120	1.0625-18	1.177	1.250	1.203	1.233
20	1.159	0.468	1.250	0.142	1.156	1.438	0.120	1.875-18	1.302	1.375	1.328	1.358
22	1.284	0.468	1.375	0.142	1.250	1.562	0.120	1.3125-18	1.427	1.500	1.453	1.483
24	1.409	0.540	1.500	0.142	1.375	1.688	0.147	1.4375-18	1.552	1.625	1.578	1.610

Reference Dimensions only – please check with actual connector manufacturer

Hermetic Wall Mount Receptacle

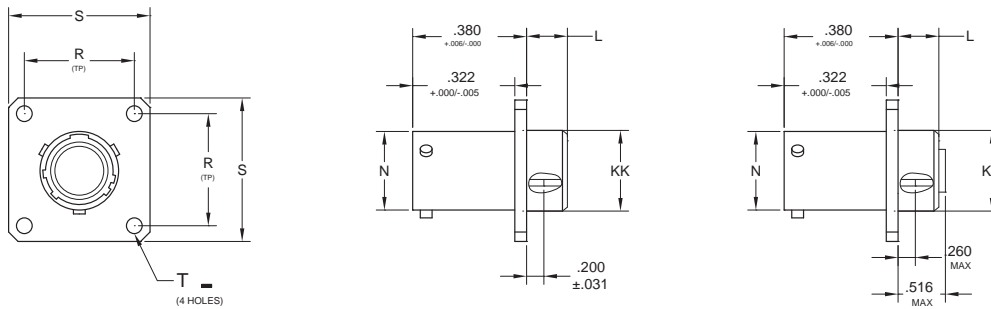
MS27475Y, MS27482Y



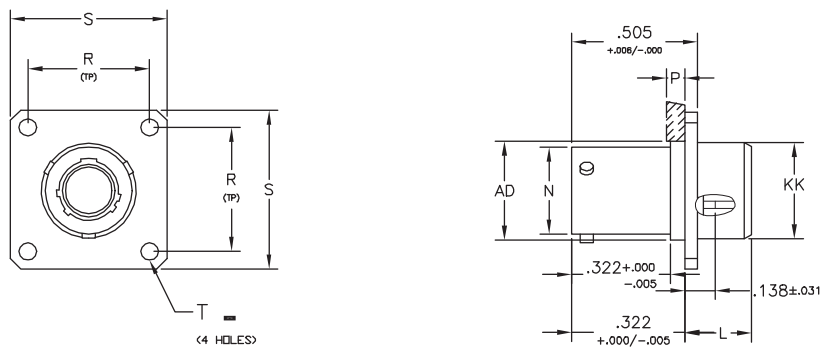
SHELL SIZE	N	S	R	T	V Thread	L
	0.001 -0.005	±016	(TP)	±005	Size UNEF Class 2A	Max.
8	0.476	0.812	0.594	0.120	.5625-24	0.234
10	0.590	0.938	0.719	0.120	.6874-24	0.234
12	0.750	1.031	0.812	0.120	.8125-20	0.234
14	0.875	1.125	0.906	0.120	.9375-20	0.234
16	1.000	1.219	0.969	0.120	1.0625-18	0.234
18	1.125	1.312	1.062	0.120	1.1875-18	0.234
20	1.250	1.438	1.156	0.120	1.3125-18	0.234
22	1.375	1.562	1.250	0.120	1.4375-18	0.234
24	1.500	1.688	1.375	0.120	1.5625-18	0.313

Box Mt. Recpt., Front Panel Mt.

MS27499E, MS27504E, MS27513E



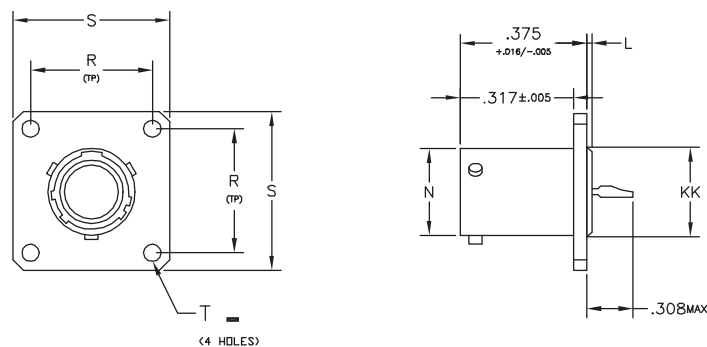
SHELL SIZE	L	KK	N	S	R	T
	Max.	Max.	0.001 -0.005	±.016	(TP)	±.005
8	0.286	0.438	0.473	0.812	0.594	0.120
10	0.286	0.563	0.590	0.938	0.719	0.120
12	0.286	0.688	0.750	1.031	0.812	0.120
14	0.286	0.813	0.875	1.125	0.906	0.120
16	0.286	0.938	1.000	1.219	0.969	0.120
18	0.286	1.047	1.125	1.312	1.062	0.120
20	0.286	1.172	1.250	1.438	1.156	0.120
22	0.286	1.297	1.375	1.562	1.250	0.120
24	0.286	1.422	1.500	1.688	1.375	0.147



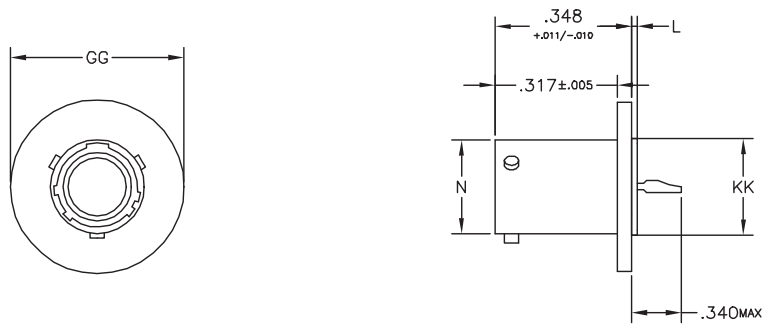
SHELL SIZE	N	R	S	L	AD	T	P	KK
	Dia. 0.001 -0.005	(TP)	±.016	Max.	Dia. ±.005	Dia. ±.005	Max. Panel Thickness	Max.
8	0.473	0.594	0.812	0.225	0.516	0.120	0.147	0.531
10	0.590	0.719	0.938	0.225	0.633	0.120	0.152	0.656
12	0.750	0.812	1.031	0.225	0.802	0.120	0.152	0.828
14	0.875	0.906	1.125	0.225	0.927	0.120	0.152	0.953
16	1.000	0.969	1.219	0.225	1.052	0.120	0.152	1.078
18	1.125	1.067	1.312	0.225	1.177	0.120	0.152	1.203
20	1.250	1.156	1.438	0.225	1.302	0.120	0.179	1.328
22	1.375	1.250	1.562	0.225	1.427	0.120	0.179	1.453
24	1.500	1.375	1.688	0.225	1.552	0.147	0.169	1.578

Hermetic Box Mount Receptacle

MS27476Y



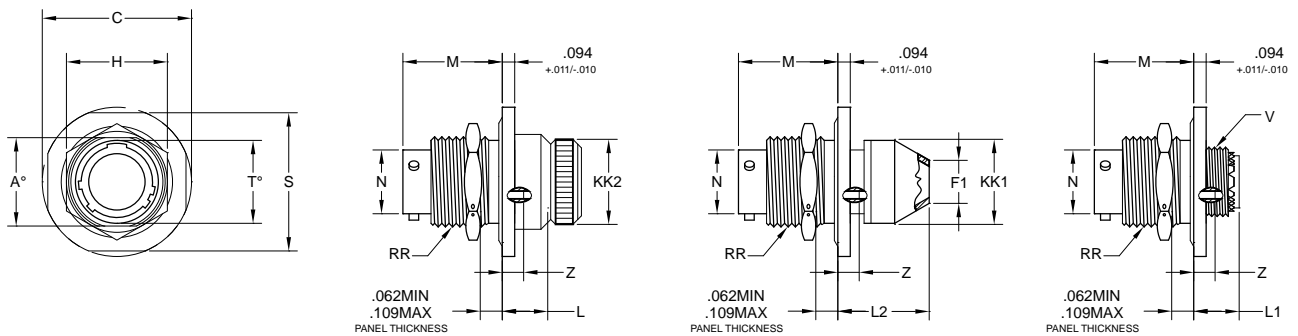
SHELL SIZE	L	KK	S	R	T	N
	0.006 -0.015	0.001 -0.005	±.016	(TP)	±.005	0.001 -0.005
8	0.051	0.562	0.812	0.594	0.120	0.473
10	0.051	0.672	0.938	0.719	0.120	0.590
12	0.051	0.781	1.031	0.812	0.120	0.750
14	0.051	0.906	1.125	0.906	0.120	0.875
16	0.051	1.031	1.219	0.969	0.120	1.000
18	0.051	1.156	1.312	1.062	0.120	1.125
20	0.051	1.250	1.438	1.156	0.120	1.250
22	0.080	1.375	1.562	1.250	0.120	1.375
24	0.080	1.500	1.688	1.375	0.147	1.500



SHELL SIZE	L	KK	GG	N
	0.011 -0.01	0.001 -0.005	0.011 -0.01	0.001 -0.005
8	0.078	0.562	0.687	0.473
10	0.078	0.672	0.797	0.590
12	0.078	0.781	0.906	0.750
14	0.078	0.906	1.031	0.875
16	0.078	1.031	1.156	1.000
18	0.078	1.156	1.281	1.125
20	0.078	1.250	1.375	1.250
22	0.107	1.375	1.500	1.375
24	0.107	1.500	1.625	1.500

Jam Nut Receptacle

MS27474, MS27481



CLASS E

CLASS P
(MS27474 ONLY)

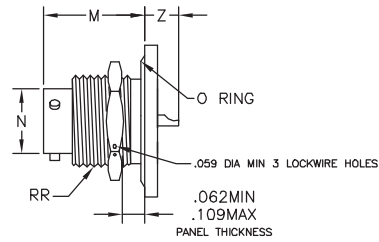
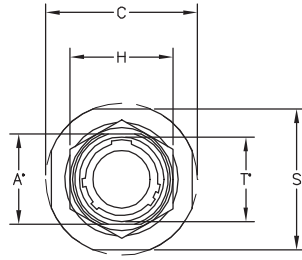
CLASS T

SHELL SIZE	A	KK ¹	KK ²	L	L ¹	F ¹	M	H	S	Z	RR THREAD (PLATED) CLASS 2A UNEF	V THREAD MODIFIED		C	T	N
	+0.00 -0.10 D Hole	DIA. MAX.	DIA. MAX.	MAX.	MAX.	DIA.	±.005	HEX +0.17 -0.16	±.016	±.031		CLASS 2A UNEF	MODIFIED MAJOR DIA.	MAX.	+0.10 -0.00 D HOLE	+0.01 -0.05
8	0.830	0.625	0.578	0.484	0.453	0.444	0.438	1.062	1.250	0.144	8750-20	4375-28	421-.417	1.390	0.884	0.473
10	0.955	0.750	0.703	0.484	0.453	0.558	0.438	1.188	1.375	0.144	1.0000-20	5625-24	542-.538	1.515	1.007	0.590
12	1.084	0.875	0.828	0.484	0.453	0.683	0.438	1.312	1.500	0.144	1.1250-18	6875-24	667-.663	1.840	1.134	0.750
14	1.208	1.000	0.953	0.484	0.453	0.808	0.438	1.438	1.625	0.144	1.2500-18	8125-20	791-.787	1.765	1.259	0.875
16	1.333	1.125	1.078	0.484	0.453	0.909	0.438	1.562	1.781	0.144	1.3750-18	9375-20	916-.912	1.953	1.384	1.000
18	1.459	1.250	1.203	0.484	0.453	1.034	0.438	1.688	1.890	0.144	1.5000-18	1.0625-18	1.034-1.030	2.031	1.507	1.125
20	1.576	1.375	1.328	0.453	0.422	1.159	0.464	1.812	2.016	0.118	1.6250-18	1.1875-18	1.158-1.154	2.156	1.634	1.250
22	1.701	1.500	1.453	0.453	0.422	1.284	0.464	2.000	2.140	0.118	1.7500-18UNS	1.3125-18	1.283-1.279	2.280	1.759	1.375
24	1.826	1.625	1.578	0.375	0.422	1.409	0.464	2.125	2.265	0.118	1.8750-16UN	1.4375-18	1.408-1.404	2.405	1.884	1.500

MIL STD – Coupling Nut has 3 lockwire holes 0.059 min. diameter

Hermetic Jam Nut Receptacle

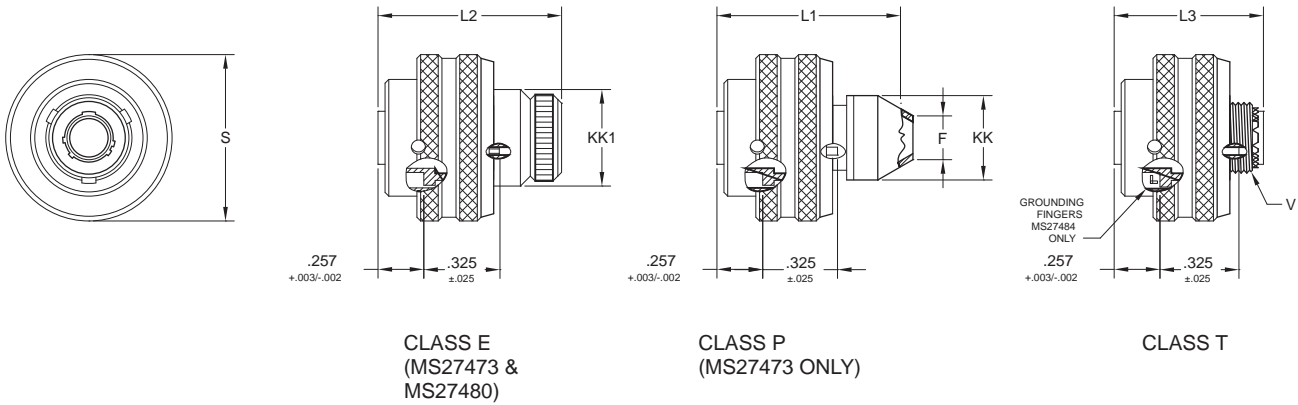
MS27477Y, MS27483Y



SHELL SIZE	M	Z	RR THREAD	N	C	S	H	T	A
	±.005	MAX.	CLASS 2A	+0.01 -0.05	MAX.	±.016	+0.017 -0.016	+0.010 -0.000 D HOLE	+0.000 -0.010 D HOLE
8	0.438	0.244	.8750-20UNEF	0.473	1.390	1.250	1.062	0.884	0.830
10	0.438	0.244	1.0000-20UNEF	0.590	1.515	1.375	1.188	1.007	0.955
12	0.438	0.244	1.1250-18UNEF	0.750	1.640	1.500	1.312	1.134	1.084
14	0.438	0.244	1.2500-18UNEF	0.875	1.765	1.625	1.438	1.259	1.208
16	0.438	0.244	1.3750-18UNEF	1.000	1.953	1.781	1.562	1.384	1.333
18	0.438	0.244	1.5000-18UNEF	1.125	2.031	1.890	1.688	1.507	1.459
20	0.464	0.218	1.6250-18UNEF	1.250	2.156	2.016	1.812	1.634	1.576
22	0.464	0.218	1.7500-18UNS	1.375	2.280	2.140	2.000	1.759	1.701
24	0.464	0.218	1.8750-16UN	1.500	2.405	2.265	2.125	1.884	1.826

Straight Plug

MS27473, MS27480, MS27484

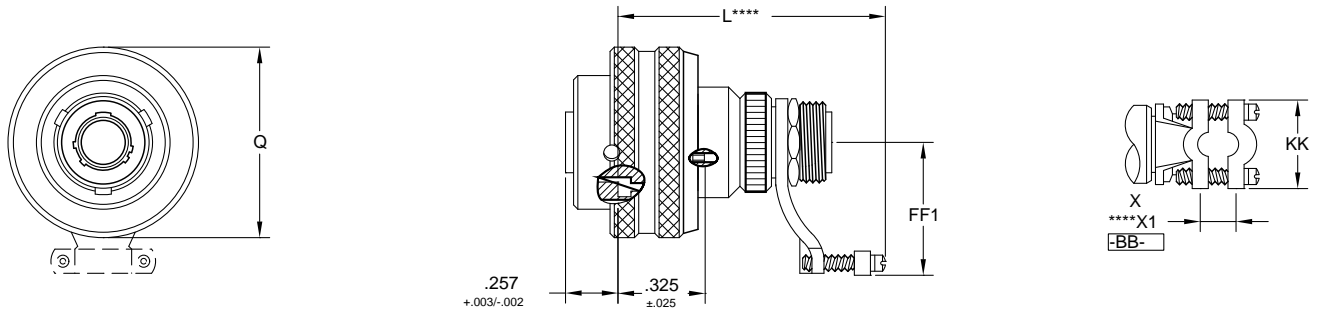


CLASS E
(MS27473 &
MS27480)

CLASS P
(MS27473 ONLY)

CLASS T

SHELL SIZE	KK	KK ¹	F	L ¹	L ²	L ³	Q	V THREAD MODIFIED	
	DIA. MAX.	MAX.	DIA.	MAX.	MAX.	MAX.	DIA. MAX.	CLASS 2A	MODIFIED MAJOR DIA.
8	0.625	0.578	0.444	1.000	0.938	0.891	0.734	.4375-28UNEF	.421-.417
10	0.750	0.703	0.558	1.000	0.938	0.891	0.844	.5625-24UNEF	.542-.538
12	0.875	0.828	0.683	1.000	0.938	0.891	1.016	.6875-24UNEF	.667-.663
14	1.000	0.953	0.808	1.000	0.938	0.891	1.141	.8125-20UNEF	.791-.787
16	1.125	1.078	0.909	1.000	0.938	0.891	1.265	.9375-20UNEF	.916-.912
18	1.250	1.203	1.034	1.000	0.938	0.891	1.391	1.0625-18UNEF	1.034-1.030
20	1.375	1.328	1.159	1.000	0.938	0.891	1.500	1.1875-18UNEF	1.158-1.154
22	1.500	1.453	1.284	1.000	0.938	0.891	1.625	1.3125-18UNEF	1.283-1.279
24	1.625	1.578	1.409	1.062	0.938	0.891	1.750	1.4375-18UNEF	1.408-1.404



**** DIMENSIONS L AND X1 ARE APPLICABLE WHEN THE END OF THE SCREW IS FLUSH WITH SURFACE BB

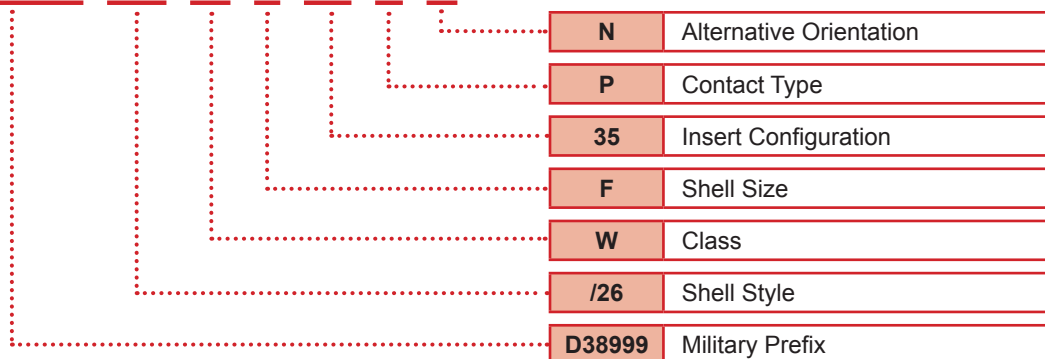
SHELL SIZE	KK	FF	FF ¹	Q	X	X ¹	H	K	L	L ¹
	MAX.	MAX.	MAX.	DIA. MAX.	MIN. CABLE	MAX. CABLE			MAX.	MAX.
8	0.755	0.438	0.984	0.734	0.082	0.234	0.547	0.156	1.578	1.125
10	0.755	0.516	1.016	0.844	0.082	0.234	0.709	0.188	1.578	1.156
12	0.817	0.594	1.078	1.016	0.114	0.328	0.829	0.281	1.656	1.250
14	0.943	0.656	1.203	1.141	0.176	0.457	1.000	0.438	1.844	1.406
16	1.067	0.719	1.265	1.265	0.238	0.634	1.021	0.500	2.000	1.469
18	1.149	0.781	1.328	1.391	0.208	0.614	1.145	0.562	2.046	1.531
20	1.399	0.844	1.359	1.500	0.302	0.608	1.270	0.625	2.125	1.594
22	1.399	0.906	1.421	1.625	0.302	0.823	1.395	0.688	2.250	1.656
24	1.587	0.969	1.703	1.750	0.332	0.823	1.520	0.750	2.422	1.797



MIL-C-38999 Series 3

Part Number Construction

D38999 /26 W F 35 P N



Alternative Orientation	
N	Normal
X	A, B, C or D – see page xx for details

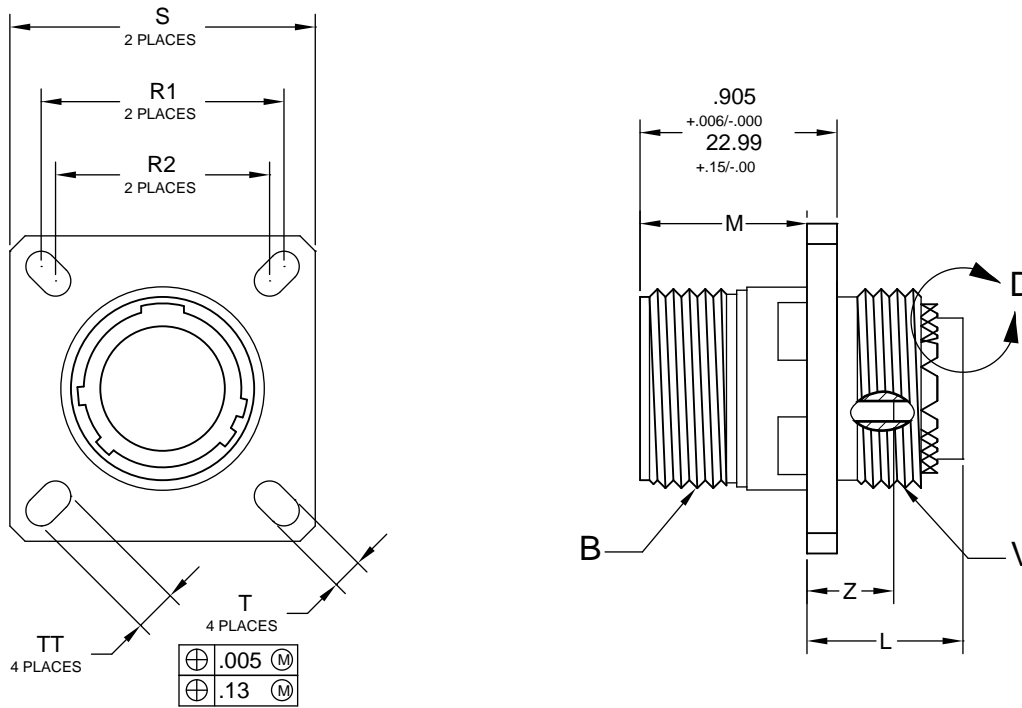
Contact Type	
A	Connector, less pin contacts
B	Connector, less socket contacts
P	Pin Contacts, including hermetic with solder pots
S	Socket Contacts, including hermetic with solder pots
X	Pin with Eyelet (Hermetic Only)
Z	Socket with Eyelet (Hermetic Only)

Insert Configuration	
xx	See Page xx for Contact Sizes and Arrangement Codes.

Shell Size	
A	9
B	11
C	13
D	15
E	17
F	19
G	21
H	23
J	25

Class	
C	Environmental, non-conductive anodise, 500 hour salt spray, 200°C
F	Environmental, electroless nickel, 200°C
K	Environmental, firewall, passivated CRES, 200°C
N	Hermetic, Electrodeposited stainless steel nickel (CRES), 200°C
S	Environmental, firewall, electrodeposited CRES, 200°C
W	Environmental, olive drab cadmium, 500 hours salt spray 175°C
Y	Hermetic, Passivated Stainless Steel (CRES) 200°C

Shell Style	
/20	Wall Mount Receptacle
/21	Hermetic Box Mount Receptacle
/23	Hermetic Jam Nut Receptacle
/24	Jam Nut Receptacle
/25	Hermetic Solder Mount Receptacle
/26	Straight Plug
/27	Hermetic Weld Mount Receptacle
/29	Lanyard Release Plug, Pin Contact
/30	Lanyard Release Plug, Socket Contact
/31	Lanyard Release Plug, MIL-STD-1760 Pin Contact
MS	Military Prefix

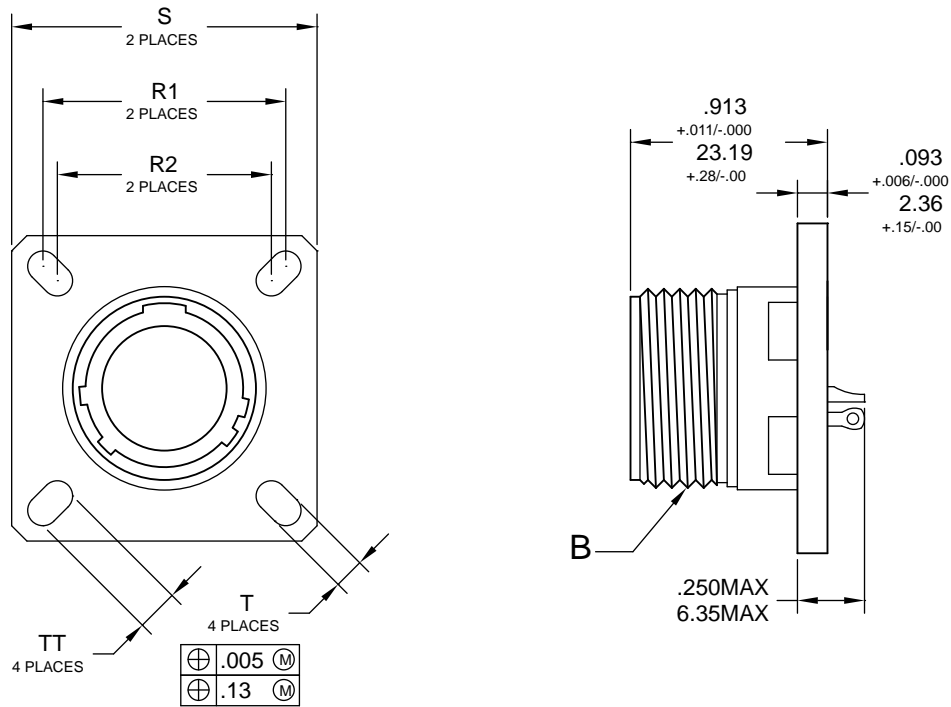


INCHES

Shell Size	MS	B Thread	L	M	R1	R2	S	T	Z	TT
	Shell Size Code	Class 2A 0.1P-0.3L-TS (Plated)	Max	0 -0.005			±.010	±.005	Max	±.005
9	A	0.625	0.469	0.820	0.719	0.594	0.938	0.128	0.153	0.216
11	B	0.750	0.469	0.820	0.812	0.719	1.031	0.128	0.153	0.194
13	C	0.875	0.469	0.820	0.906	0.812	1.125	0.128	0.153	0.194
15	D	1.000	0.469	0.820	0.969	0.906	1.219	0.128	0.153	0.173
17	E	1.188	0.469	0.820	1.062	0.969	1.312	0.128	0.153	0.194
19	F	1.250	0.469	0.820	1.156	1.062	1.438	0.128	0.153	0.194
21	G	1.375	0.500	0.790	1.250	1.156	1.562	0.128	0.183	0.194
23	H	1.500	0.500	0.790	1.375	1.250	1.688	0.154	0.183	0.242
25	J	1.625	0.500	0.790	1.500	1.375	1.812	0.154	0.183	0.242

MILLIMETRES

Shell Size	MS	L	M	R1	R2	S	T	Z	TT	V
	Shell Size Code	Max.	0 -0.13			±.25	±.13	Max.	±.13	Thread Metric
9	A	11.910	20.830	18.260	15.090	23.830	3.250	3.890	5.490	M12X1-6g
11	B	11.910	20.830	20.620	18.260	26.190	3.250	3.890	4.930	M15X1-6g
13	C	11.910	20.830	23.010	20.620	28.500	3.250	3.890	4.930	M18X1-6g
15	D	11.910	20.830	24.610	23.010	30.960	3.250	3.890	4.930	M22X1-6g
17	E	11.910	20.830	26.970	24.610	33.320	3.250	3.890	4.930	M25X1-6g
19	F	11.910	20.830	29.360	26.970	36.530	3.250	3.890	4.930	M28X1-6g
21	G	12.700	20.070	31.750	29.360	29.670	3.250	4.650	4.930	M31X1-6g
23	H	12.700	20.070	34.930	31.750	42.880	3.910	4.650	6.150	M34X1-6g
25	J	12.700	20.070	38.100	34.930	46.020	3.910	4.650	6.150	M37X1-6g

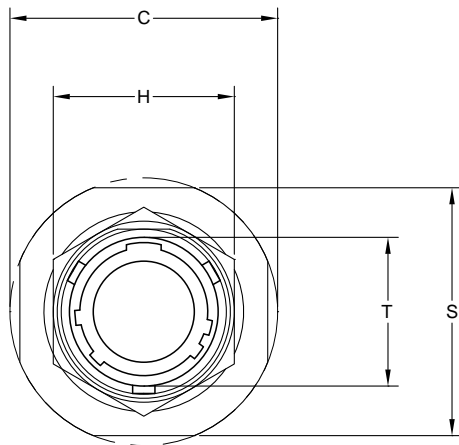


INCHES

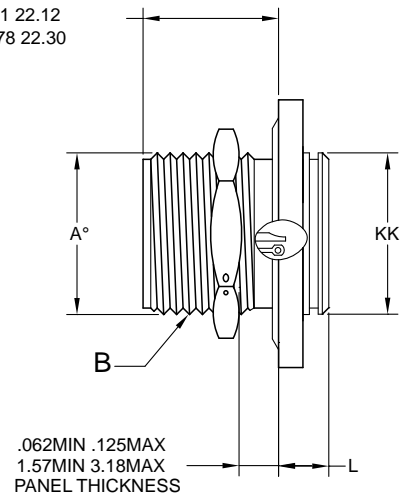
Shell Size	MS	B Thread	R1	R2	S	T	TT
	Shell Size Code	Class 2A 0.1P-0.3L-TS (Plated)			±.010	±.005	±.005
9	A	0.625	0.719	0.594	0.938	0.128	0.216
11	B	0.750	0.812	0.719	1.031	0.128	0.194
13	C	0.875	0.906	0.812	1.125	0.128	0.194
15	D	1.000	0.969	0.906	1.219	0.128	0.173
17	E	1.188	1.062	0.969	1.312	0.128	0.194
19	F	1.250	1.156	1.062	1.438	0.128	0.194
21	G	1.375	1.250	1.156	1.562	0.128	0.194
23	H	1.500	1.375	1.250	1.688	0.154	0.242
25	J	1.625	1.500	1.375	1.812	0.154	0.242

MILLIMETRES

Shell Size	MS	R1	R2	S	T	TT
	Shell Size Code			±.25	±.13	±.13
9	A	18.260	15.090	23.830	3.250	5.490
11	B	20.620	18.260	26.190	3.250	4.930
13	C	23.010	20.620	28.580	3.250	4.930
15	D	24.610	23.010	30.960	3.250	4.390
17	E	26.970	24.610	33.320	3.250	4.930
19	F	29.360	26.970	36.530	3.250	4.930
21	G	31.750	29.360	39.670	3.250	4.930
23	H	34.930	31.750	42.880	3.910	6.150
25	J	38.100	34.930	46.020	3.910	6.150



K REF
SHELL SIZES 9/11-.871 22.12
SHELL SIZES 13/25-.878 22.30

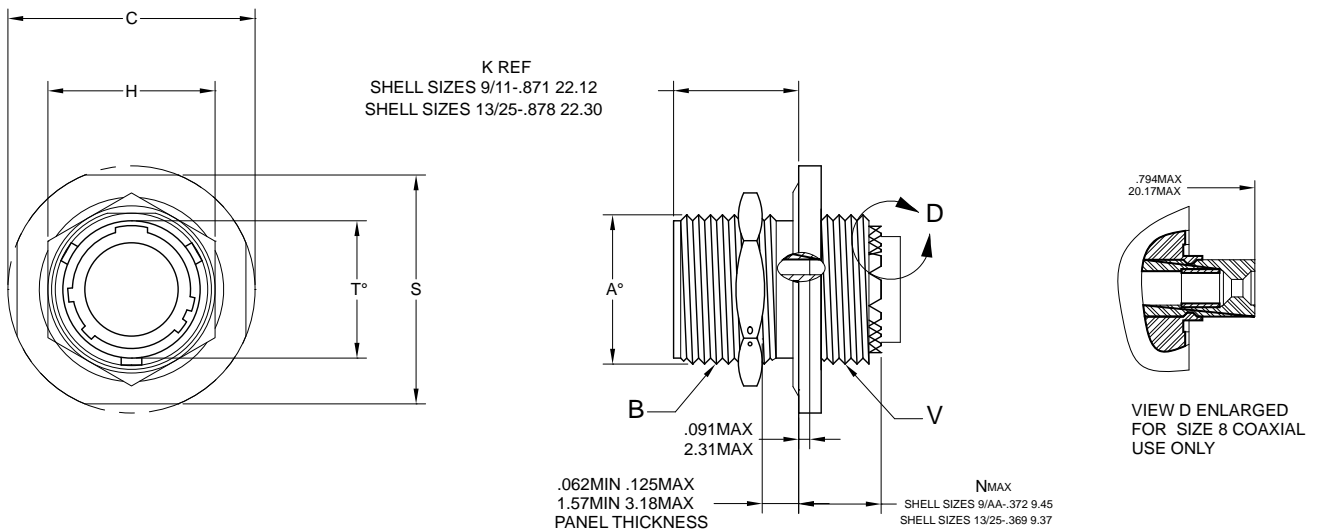


INCHES

Shell Size	MS	A	B Thread	C	H	L	S	T	KK
	Shell Size Code	0 -0.01 D Hole	Class 2A 0.1P-0.3L-TP (Plated)	Max.	Hex 0.017 -0.016	Max.	±.010	0.01 0 D Hole	0.28 0
9	A	0.669	0.625	1.199	0.875	0.357	1.062	0.697	0.642
11	B	0.769	0.750	1.386	1.000	0.357	1.250	0.822	0.766
13	C	0.955	0.875	1.511	1.188	0.357	1.375	1.007	0.892
15	D	1.084	1.000	1.636	1.312	0.357	1.500	1.134	1.018
17	E	1.208	1.188	1.761	1.438	0.357	1.625	1.259	1.142
19	F	1.333	1.250	1.949	1.562	0.381	1.812	1.384	1.268
21	G	1.459	1.375	2.073	1.688	0.381	1.938	1.507	1.392
23	H	1.575	1.500	2.199	1.812	0.381	2.062	1.634	1.518
25	J	1.709	1.625	2.323	2.000	0.381	2.188	1.759	1.642

MILLIMETRES

Shell Size	MS	A	C	H	L	S	T	KK
	Shell Size Code	0 -0.25 D Hole	Max	Hex 0.43 -0.41	Max.	±.25	0.25 0 D Hole	0.28 0
9	A	16.990	30.450	22.230	9.070	26.970	17.700	16.310
11	B	19.530	35.200	25.400	9.070	31.750	20.880	19.460
13	C	24.260	38.380	30.180	9.070	34.930	25.580	22.660
15	D	27.530	41.550	33.320	9.070	38.100	28.800	25.860
17	E	30.680	44.730	36.530	9.070	41.280	31.980	29.010
19	F	33.860	49.500	39.670	9.680	46.020	35.150	32.210
21	G	37.060	52.650	42.800	9.680	49.230	38.280	35.360
23	H	40.010	55.850	46.020	9.680	52.370	41.500	38.560
25	J	43.410	59.000	50.800	9.680	55.580	44.680	41.710

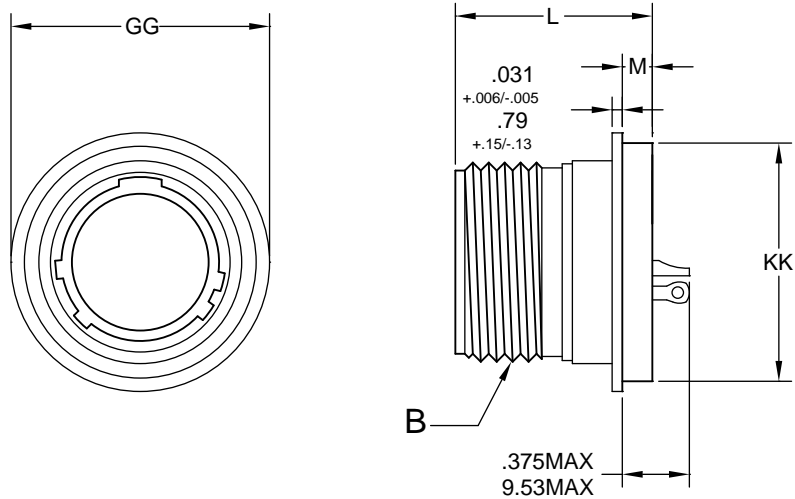


INCHES

Shell Size	MS	A	B Thread	C	H	S	T
	Shell Size Code	0 -0.01 D Hole	Class 2A 0.1P-0.3L-TS (Plated)	Max.	Hex 0.017 -0.016	±.010	0.01 0 D Hole
9	A	0.669	0.625	1.199	0.875	1.062	0.697
11	B	0.769	0.75	1.386	1	1.25	0.822
13	C	0.955	0.875	1.511	1.188	1.375	1.007
15	D	1.084	1	1.636	1.312	1.5	1.134
17	E	1.208	1.1875	1.761	1.438	1.625	1.259
19	F	1.333	1.25	1.949	1.562	1.812	1.384
21	G	1.459	1.375	2.073	1.688	1.938	1.507
23	H	1.575	1.5	2.199	1.812	2.062	1.634
25	J	1.709	1.625	2.323	2	2.188	1.759

MILLIMETRES

Shell Size	MS	A	C	H	S	T	V
	Shell Size Code	0 -0.25 D Hole	Max	Hex 0.43 -0.41	±.25	0.25 0 D Hole	Thread Metric
9	A	16.99	30.45	22.23	26.97	17.7	M12X1-6g
11	B	19.53	35.2	25.4	31.75	20.88	M15X1-6g
13	C	24.26	38.38	30.18	34.93	25.58	M18X1-6g
15	D	27.53	41.55	33.32	38.1	28.8	M22X1-6g
17	E	30.68	44.73	36.53	41.28	31.98	M25X1-6g
19	F	33.86	49.5	39.67	46.02	35.15	M28X1-6g
21	G	37.06	52.65	42.88	49.23	38.28	M31X1-6g
23	H	40.01	55.85	46.02	52.37	41.5	M34X1-6g
25	J	43.41	59	50.8	55.58	44.68	M37X1-6g

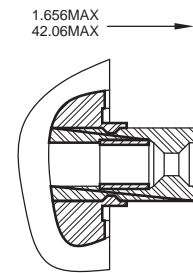
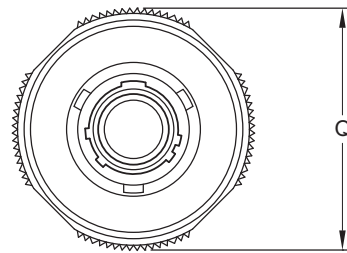
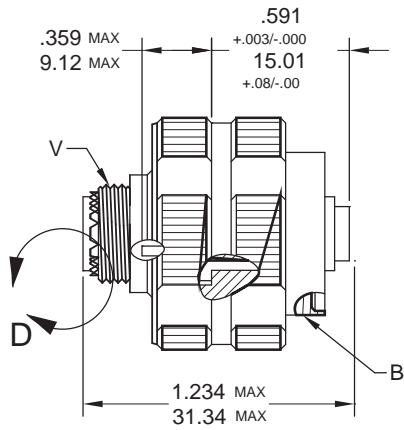


INCHES

Shell Size	MS	B Thread	L	M	GG	KK
	Shell Size Code	Class 2A 0.1P-0.3L-TS (Plated)	0.011 0	0.006 -0.005	Dia. 0.011 -0.01	Dia. 0.001 -0.005
9	A	0.625	0.806	0.125	0.75	0.672
11	B	0.75	0.806	0.125	0.844	0.781
13	C	0.875	0.806	0.125	0.969	0.906
15	D	1	0.806	0.125	1.094	1.031
17	E	1.1875	0.806	0.125	1.218	1.156
19	F	1.25	0.806	0.125	1.312	1.25
21	G	1.375	0.806	0.125	1.438	1.375
23	H	1.5	0.838	0.156	1.563	1.5
25	J	1.625	0.838	0.156	1.688	1.625

MILLIMETRES

Shell Size	MS	L	M	GG	KK
	Shell Size Code	0.28 0	0.15 -0.13	Dia. 0.28 -0.25	Dia. 0.03 -0.13
9	A	20.47	3.18	19.05	17.07
11	B	20.47	3.18	21.44	19.84
13	C	20.47	3.18	24.61	23.01
15	D	20.47	3.18	27.79	26.19
17	E	20.47	3.18	30.94	29.36
19	F	20.47	3.18	33.32	31.75
21	G	20.47	3.18	36.53	34.93
23	H	21.29	3.96	39.7	38.1
25	J	21.29	3.96	42.88	41.28



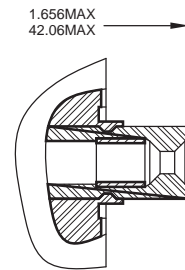
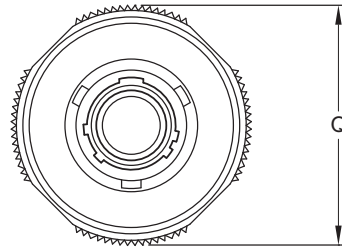
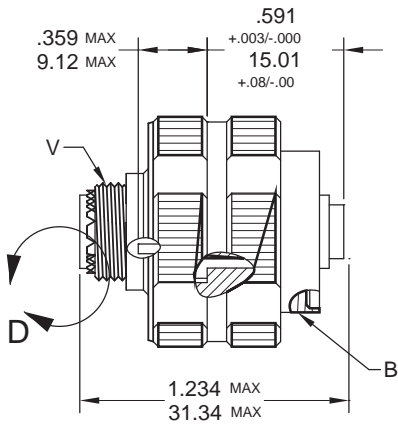
VIEW D ENLARGED FOR SIZE 8 COAXIAL USE ONLY

INCHES

Shell Size	MS	B Thread	Q
	Shell Size Code	0.1P-0.3L-TS-2B (Plated)	Max
9	A	0.625	0.859
11	B	0.750	0.969
13	C	0.875	1.141
15	D	1.000	1.266
17	E	1.188	1.391
19	F	1.250	1.5
21	G	1.375	1.625
23	H	1.500	1.75
25	J	1.625	1.875

MILLIMETRES

Shell Size	MS	Q	V
	Shell Size Code	Max.	Thread Metric
9	A	21.82	M12X1-6g
11	B	24.62	M15X1-6g
13	C	28.98	M18X1-6g
15	D	32.16	M22X1-6g
17	E	35.33	M25X1-6g
19	F	38.10	M28X1-6g
21	G	41.28	M31X1-6g
23	H	44.45	M34X1-6g
25	J	47.63	M37X1-6g



VIEW D ENLARGED FOR SIZE 8 COAXIAL USE ONLY

INCHES

Shell Size	MS	B Thread	S	T
	Shell Size Code	Class 2A 0.1P-0.3L-TS (Plated)	Dia. ±.012 0	Dia. ±.000 -0.012
9	A	0.625	0.973	0.941
11	B	0.750	1.094	1.063
13	C	0.875	1.220	1.189
15	D	1.000	1.346	1.314
17	E	1.188	1.433	1.402
19	F	1.250	1.579	1.547
21	G	1.375	1.720	1.689
23	H	1.500	1.886	1.854
25	J	1.625	1.972	1.941

MILLIMETRES

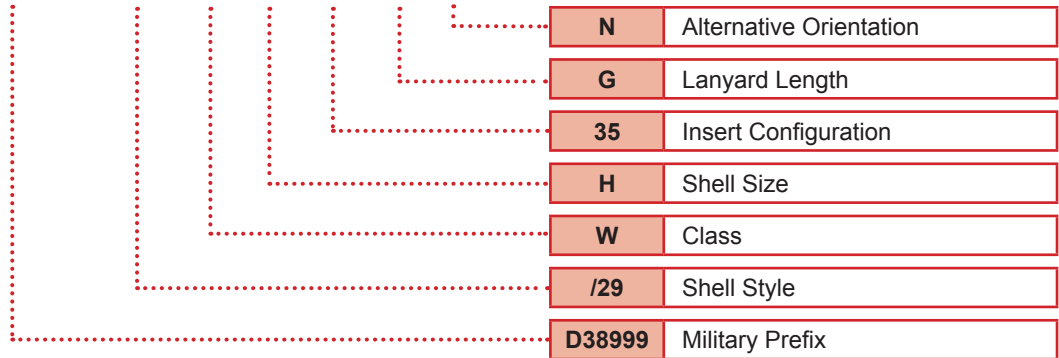
Shell Size	MS	.S	T
	Shell Size Code	Dia ±.3 0	Dia. ±.0 -0.3
9	A	24.70	23.90
11	B	27.80	27.00
13	C	31.00	30.20
15	D	34.20	33.40
17	E	36.40	35.60
19	F	40.10	39.30
21	G	43.70	42.90
23	H	47.90	47.10
25	J	50.10	49.30



MIL-C-38999 Series 3 – Lanyard Plugs

Part Number Construction

D38999 /29 W H 35 G N



Alternative Orientation	
N	Normal position only available

Lanyard Length ± 6mm or 0.236"					
CODE	MM	INCHES	CODE	MM	INCHES
A	102	4.016	M	254	10.000
B	115	4.528	N	267	10.512
C	127	5.000	P	280	11.024
D	140	5.512	R	293	11.535
E	153	6.024	S	305	12.008
F	166	6.535	T	318	12.520
G	178	7.008	U	331	13.031
H	191	7.520	V	356	14.016
I	203	7.992	W	381	15.000
J	216	8.503	X	407	16.024
K	229	9.016	Y	432	17.008
L	242	9.528	Z	458	18.031

Insert Configuration	
xx	See Page xx for Contact Sizes and Arrangement Codes.

Shell Style	
/29	Lanyard Release Plug, Pin Contact
/30	Lanyard Release Plug, Socket Contact
/31	Lanyard Release Plug, MIL-STD-1760 Pin Contact

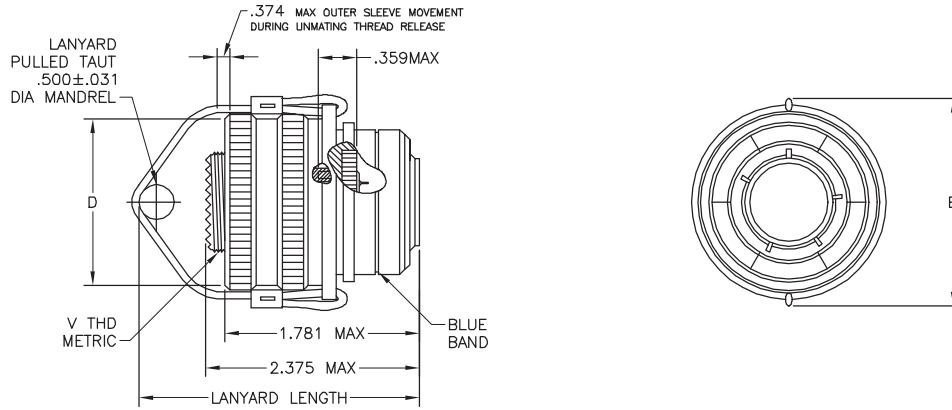
Shell Size	
A	9
B	11
C	13
D	15
E	17
F	19
G	21
H	23
J	25

Class	
C*	Environmental, non-conductive anodise, 500 hour salt spray, 200°C
F*	Environmental, electroless nickel, 200°C
K*	Environmental, firewall, passivated CRES, 200°C
S*	Environmental, firewall, CRES, electrodeposited nickel, 200°C
W*	Environmental, olive drab cadmium, 500 hours salt spray 175°C

** Not available on shell style /31*

MS	Military Prefix
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Lanyard Release Plug - /29 Pins Only - /30 Sockets Only D38999/29, /30



Shell Size	MS	B	D Max	V Thread
	Shell Size Code	Max	Accessory Dia	Metric
11	B	1.846	1.109	M15X1.0-6g 0.100R
13	C	1.972	1.250	M18X1.0-6g 0.100R
15	D	2.079	1.375	M22X1.0-6g 0.100R
17	E	2.205	1.500	M25X1.0-6g 0.100R
19	F	2.301	1.625	M28X1.0-6g 0.100R
21	G	2.472	1.750	M31X1.0-6g 0.100R
23	H	2.594	1.875	M34X1.0-6g 0.100R
25	J	2.705	2.000	M37X1.0-6g 0.100R

Lanyard Release Plug - /31WJ MIL-STD-1760 Pin Contacts D38999/31WJ

Shell Size 25 only.

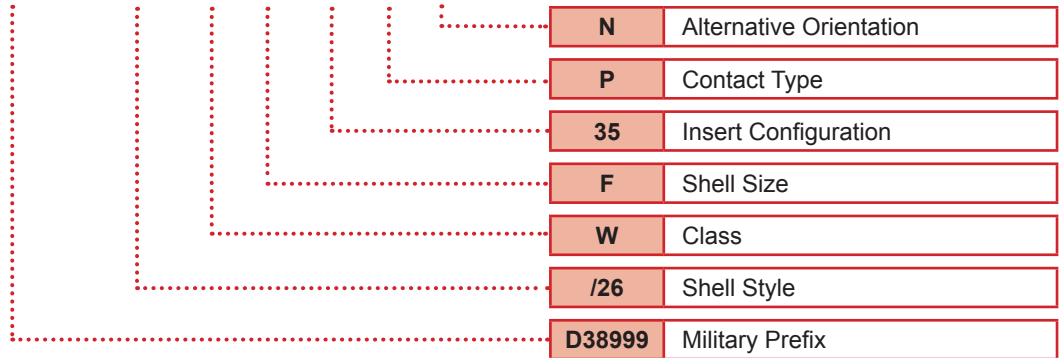
Mechanical outline data available on request only.



MIL-C-38999 Series 4

Part Number Construction

D38999 /40 W F 35 P N



Alternative Orientation	
N	Normal
X	A, B, C or D – see page xx for details

Contact Type	
A	Connector, less pin contacts
B	Connector, less socket contacts
P	Pin Contacts, including hermetic with solder pots
S	Socket Contacts, including hermetic with solder pots
X	Pin with Eyelet (Hermetic Only)
Z	Socket with Eyelet (Hermetic Only)

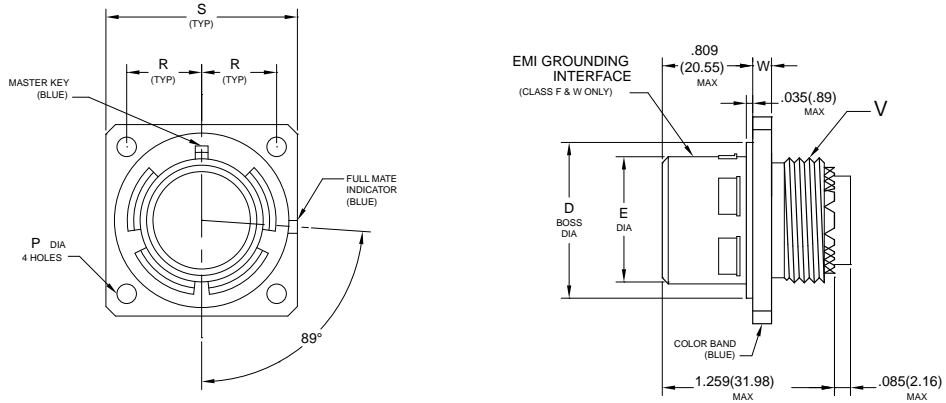
Insert Configuration	
xx	See Page xx for Contact Sizes and Arrangement Codes.

Shell Size	
A	9
B	11
C	13
D	15
E	17
F	19
G	21
H	23
J	25

Class	
C	Environmental, non-conductive anodise, 500 hour salt spray, 200°C
F	Environmental, electroless nickel, 200°C
K	Environmental, firewall, passivated CRES, 200°C
N	Hermetic, Electrodeposited stainless steel nickel (CRES), 200°C
S	Environmental, firewall, electrodeposited CRES, 200°C
W	Environmental, olive drab cadmium, 500 hours salt spray 175°C
Y	Hermetic, Passivated Stainless Steel (CRES) 200°C

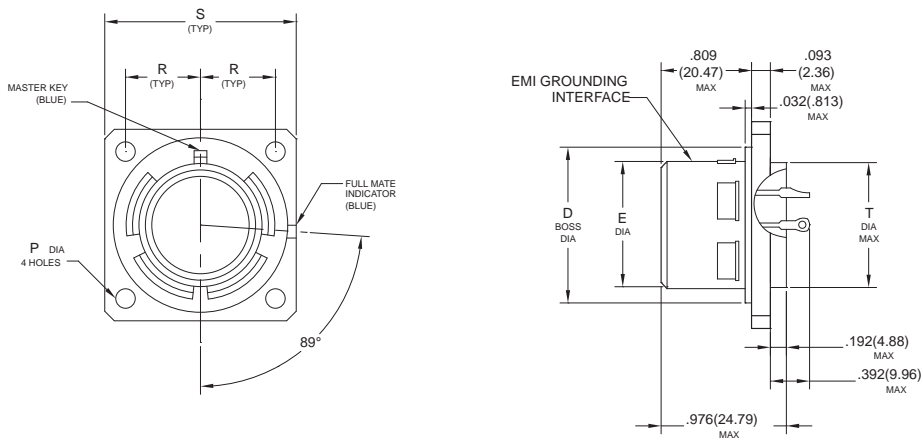
Shell Style	
/40	Wall Mount Receptacle
/41	Hermetic Seal Box Mount Receptacle
/42	Box Mount Receptacle
/43	Hermetic Seal Jam Nut Receptacle
/44	Jam Nut Receptacle
/45	Hermetic Seal Solder Mount Receptacle
/46	EMI Straight Plug
/47	Straight Plug
/48	Hermetic Weld Mount Receptacle
/49	In-Line Receptacle

MS	Military Prefix
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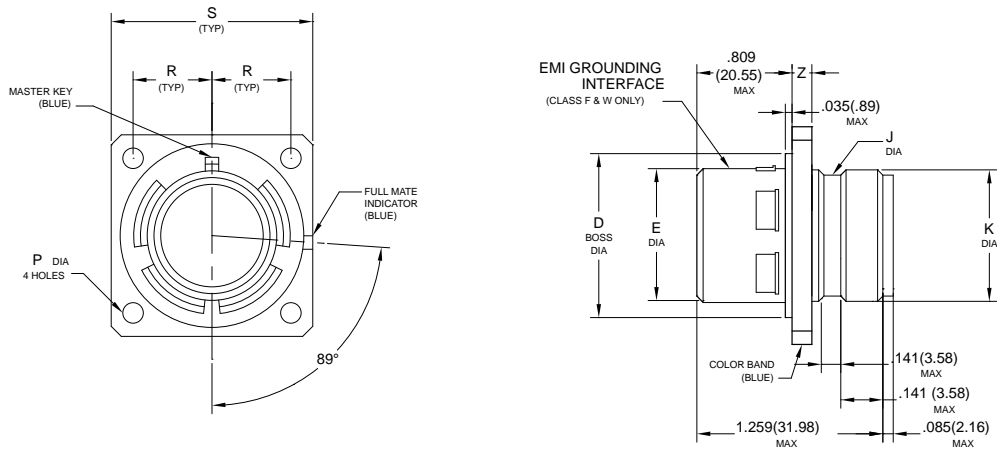


Shell Size	D Boss		E		P		R		S		V Thread	W Max.	
	Dia. Max.		Dia. Max.		Dia. Min.		Bsc.		Max.		Metric	In.	mm
	In.	mm	In.	mm	mm	In.	In.	mm	In.	mm			
11	0.793	20.140	0.509	12.930	0.122	3.100	0.406	10.310	1.051	26.700	M15X1.0-6-0.1R	0.102	2.590
13	0.919	23.340	0.634	16.100			0.453	11.510	1.145	29.080	M18X1.0-6-0.1R		
15	1.044	26.520	0.759	19.280			0.484	12.310	1.240	31.500	M22X1.0-6-0.1R		
17	1.170	29.720	0.885	22.480			0.531	13.490	1.334	33.880	M25X1.0-6-0.1R		
19	1.294	32.870	1.009	25.630			0.578	14.680	1.460	37.080	M28X1.0-6-0.1R		
21	1.419	36.040	1.134	28.800	0.142	3.610	0.625	15.880	1.582	40.180	M31X1.0-6-0.1R	0.133	3.380
23	1.544	39.220	1.259	31.980			0.687	17.460	1.708	43.380	M34X1.0-6-0.1R		
25	1.669	42.390	1.384	35.150			0.75	19.050	1.834	46.580	M37X1.0-6-0.1R		

Hermetic Seal Box Mount Receptacle

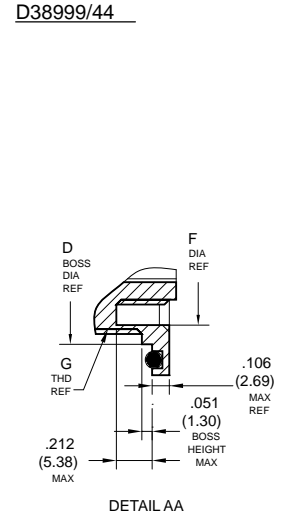
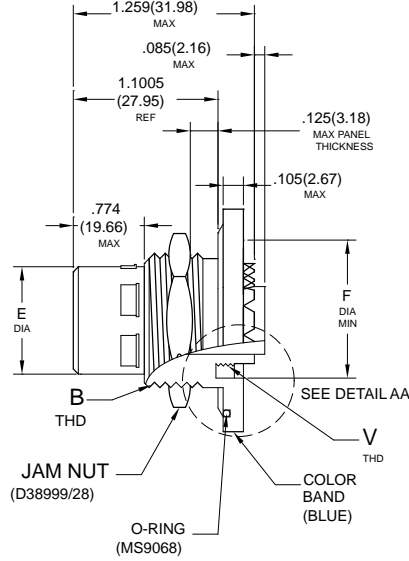
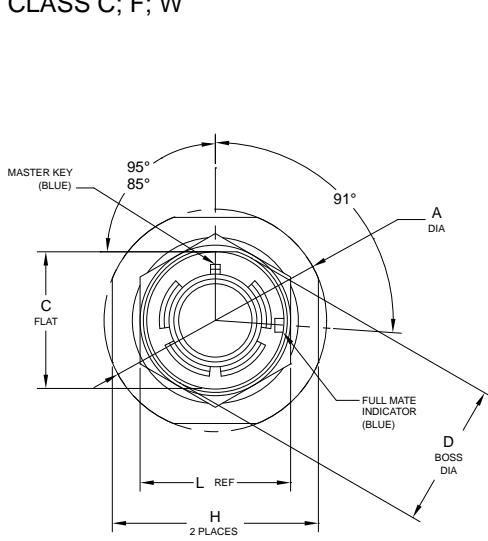


Shell Size	D Boss		E		P		R		S		T	
	Dia. Max.		Dia. Max.		Dia. Min.		Bsc.		Max.		Dia. Max	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
11	0.793	20.140	0.509	12.930	0.122	3.100	0.406	10.310	1.051	26.700	0.625	15.88
13	0.919	23.340	0.634	16.100			0.453	11.510	1.145	29.080	0.750	19.05
15	1.044	26.520	0.759	19.280			0.484	12.310	1.240	31.500	0.906	23.01
17	1.170	29.720	0.885	22.480			0.531	13.490	1.334	33.880	1.016	25.81
19	1.294	32.870	1.009	25.680			0.578	14.680	1.480	37.080	1.141	28.98
21	1.419	36.040	1.134	28.800	0.142	3.610	0.625	15.880	1.582	40.180	1.266	32.16
23	1.544	39.220	1.259	31.900			0.687	17.460	1.708	43.380	1.375	34.93
25	1.669	42.390	1.384	35.150			0.75	19.050	1.834	46.580	1.484	37.69



Shell Size	D Boss		E		J		K		P		R		S		Z	
	Dia. Max.		Dia. Max.		Dia. Max.		Dia. Max.		Dia. Min.		Bsc.		Max.		Dia. Max. Ref.	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
11	0.793	20.140	0.509	12.930	0.535	13.590	0.578	14.680	0.122	3.100	0.406	10.310	1.051	26.700	0.102	2.59
13	0.919	23.340	0.634	16.100	0.649	16.480	0.692	17.580			0.453	11.510	1.145	29.080		
15	1.044	26.520	0.759	19.280	0.771	19.580	0.818	20.780			0.484	12.310	1.240	31.500		
17	1.170	29.720	0.885	22.480	0.897	22.780	0.944	23.980			0.531	13.490	1.334	33.880		
19	1.294	32.870	1.009	25.630	1.003	25.480	1.051	26.700			0.578	14.680	1.480	37.080		
21	1.419	36.040	1.134	28.800	1.129	28.680	1.173	29.790			0.625	15.880	1.582	40.180		
23	1.544	39.220	1.259	31.900	1.255	31.880	1.299	32.990	0.142	3.610	0.687	17.460	1.708	43.380	0.133	3.38
25	1.669	42.390	1.384	35.150	1.377	34.980	1.425	36.200			0.75	19.050	1.834	46.580		

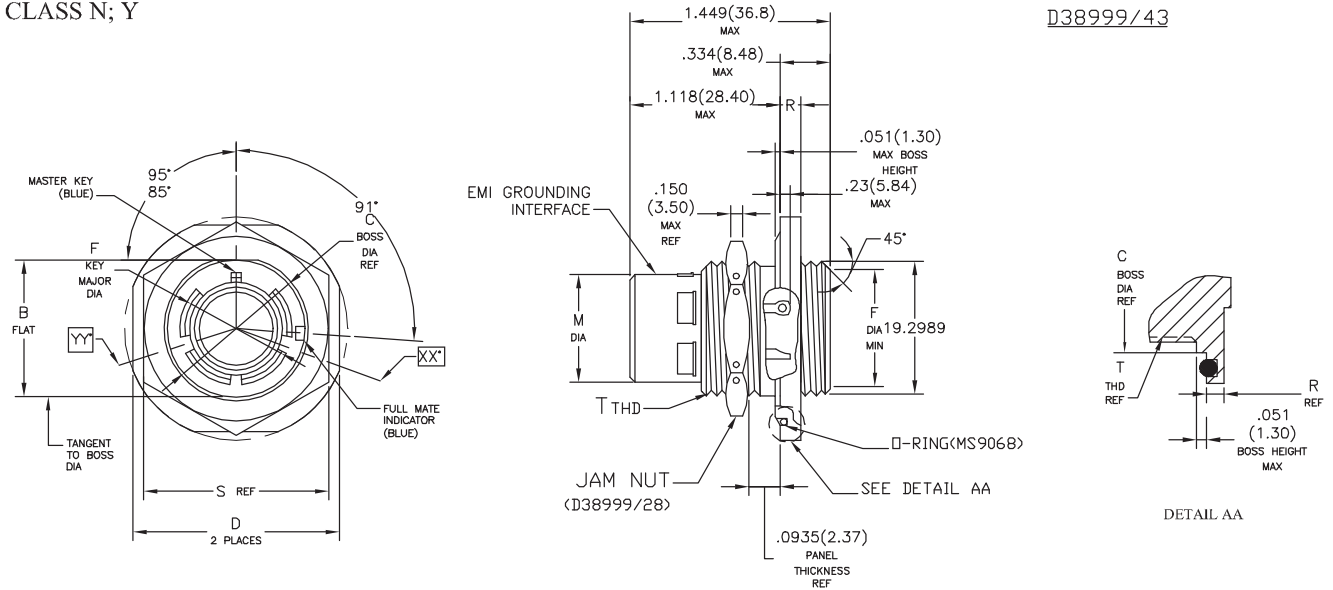
JAM NUT RECEPTACLE CLASS C; F; W



Shell Size	A		B		C Boss		D		F		M		N		P	
	Dia. Max		Flat Max.		Dia. Max		Max.		Dia. Ref.		Dia. Max.		Dia. Max		Dia. Max	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
11	1.386	35.200	0.755	19.180	0.815	20.700	1.268	32.210	0.589	14.960	0.509	12.930	0.732	18.590	0.779	19.790
13	1.512	38.400	0.942	23.930	1.004	25.500	1.394	35.410	0.720	18.290	0.634	16.100	0.858	21.790	0.909	23.090
15	1.638	41.610	1.066	27.080	1.126	28.600	1.520	38.610	0.844	21.440	0.759	19.280	0.984	24.990	1.035	26.290
17	1.764	44.810	1.191	30.250	1.259	31.950	1.642	41.710	0.969	24.610	0.885	22.480	1.110	28.190	1.157	29.390
19	1.949	49.500	1.316	33.430	1.384	35.150	1.831	46.510	1.088	27.640	1.009	25.680	1.236	31.390	1.283	32.590
21	2.075	52.710	1.442	36.630	1.507	38.280	1.957	49.710	1.213	30.810	1.134	28.800	1.358	34.490	1.409	35.790
23	2.201	55.910	1.565	39.750	1.626	41.300	2.079	52.810	1.342	34.090	1.259	31.900	1.484	37.690	1.535	38.990
25	2.327	59.110	1.692	42.980	1.752	44.500	2.205	56.010	1.489	37.310	1.384	35.150	1.610	40.890	1.657	42.990

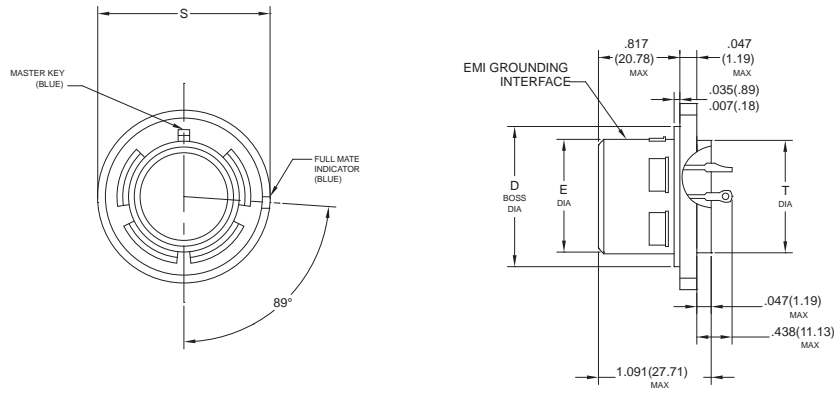
Shell Size	R		S		T Thread	Recommended Packing (O Ring)
	Max.		Ref.		Metric	
	In.	mm	In.	mm		
11.000	0.118	3.000	1.036	26.310	M20X1.0-6g-0.1R	MS9068-022
13.000			1.230	31.240	M25X1.0-6g-0.1R	MS9068-024
15.000			1.387	35.230	M28X1.0-6g-0.1R	MS9068-026
17.000			1.429	36.300	M32X1.0-6g-0.1R	MS9068-028
19.000			1.586	40.280	M35X1.0-6g-0.1R	MS9068-128
21.000	0.150	3.810	1.783	45.290	M38X1.0-6g-0.1R	MS9068-130
23.000			1.941	49.300	M41X1.0-6g-0.1R	MS9068-132
25.000			1.941	49.300	M44X1.0-6g-0.1R	MS9068-134

HERMETIC SEAL JAM NUT RECEPTACLE
CLASS N; Y



Shell Size	A Dia. Max.		C Flat Max		D Dia. Max.		E Dia. Max.		F Dia. Min.		G Thread Metric	H Fla Max.	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm		In.	mm
11	1.520	38.610	0.942	23.930	1.000	25.400	0.509	12.930	0.794	20.170	M25X1.0-6g-0.1R	1.394	35.410
13	1.642	41.710	1.066	27.080	1.125	28.760	0.634	16.100	0.918	23.320	M28X1.0-6g-0.1R	1.520	38.610
15	1.768	44.910	1.191	30.250	1.250	31.750	0.759	19.280	1.036	26.310	M31X1.0-6g-0.1R	1.642	41.710
17	1.957	49.710	1.321	33.550	1.375	34.930	0.885	22.480	1.172	29.770	M34X1.0-6g-0.1R	1.799	45.690
19	2.035	51.690	1.441	36.600	1.500	38.100	1.009	25.680	1.286	32.660	M38X1.0-6g-0.1R	1.909	48.490
21	2.157	54.790	1.566	39.780	1.625	41.280	1.134	28.800	1.412	35.860	M41X1.0-6g-0.1R	2.035	51.690
23	2.283	57.990	1.691	42.950	1.750	44.450	1.259	31.900	1.536	39.010	M44X1.0-6g-0.1R	2.757	55.040
25	2.409	61.190	1.816	46.130	1.875	47.630	1.384	35.150	1.662	42.210	M47X1.0-6g-0.1R	2.283	57.390

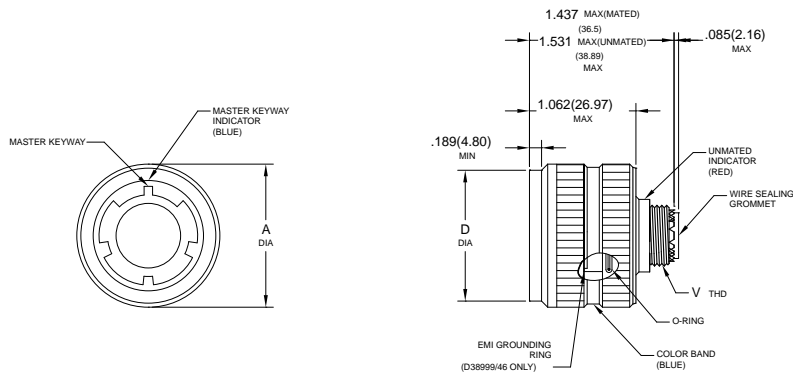
Shell Size	L Ref.		V Thread Metric	Recommended Packing (O Ring)
	In.	mm		
11	1.260	32	M15X1.0-6g-0.1R	MS9068-24
13	1.417	36	M18X1.0-6g-0.1R	MS9068-26
15	1.614	41	M22X1.0-6g-0.1R	MS9068-28
17	1.614	41	M25X1.0-6g-0.1R	MS9068-29
19	1.811	46	M28X1.0-6g-0.1R	MS9068-30
21	1.968	50	M31X1.0-6g-0.1R	MS9068-31
23	1.968	50	M34X1.0-6g-0.1R	MS9068-32
25	2.165	55	M37X1.0-6g-0.1R	MS9068-33



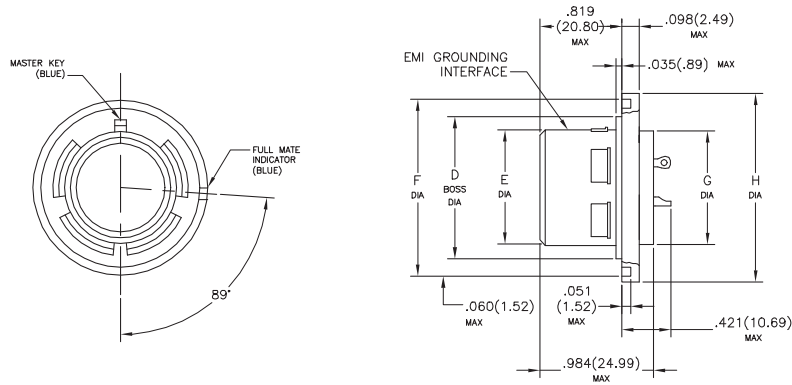
Shell Size	D Boss		E		S		T	
	Dia. Max.		Dia. Max.		Dia. Max.		Dia. Max.	
	In.	mm	In.	mm	In.	mm	In.	mm
11	0.793	20.140	0.509	12.930	0.862	21.890	0.783	19.890
13	0.919	23.340	0.634	16.100	0.988	25.100	0.909	23.090
15	1.044	26.520	0.759	19.280	1.110	28.190	1.035	26.290
17	1.170	29.720	0.885	22.480	1.236	31.390	1.157	29.390
19	1.294	32.870	1.009	25.630	1.330	33.780	1.251	31.780
21	1.419	36.040	1.134	28.800	1.456	36.980	1.377	34.980
23	1.544	39.220	1.259	31.900	1.582	40.180	1.503	38.180
25	1.669	42.390	1.384	35.150	1.704	43.280	1.629	41.380

Straight Plug, Class C, F, W

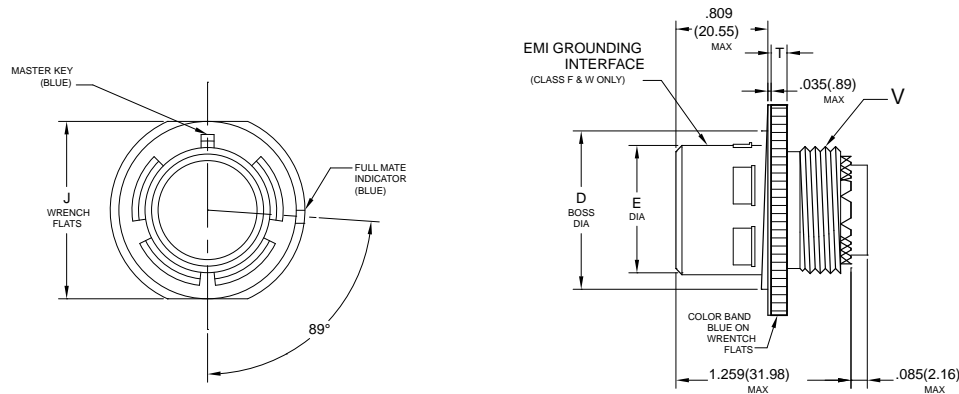
D38999/46, /47



Shell Size	A		D		V
	Dia. Max.		Dia. Max.		
	In.	mm	In.	mm	Thread Metric
11	1.054	26.77	0.775	19.69	M15X-1.0-6g-0.1R
13	1.226	31.14	0.901	22.89	M18X-1.0-6g-0.1R
15	1.351	34.32	1.039	26.39	M22X-1.0-6g-0.1R
17	1.476	37.49	1.149	29.18	M25X-1.0-6g-0.1R
19	1.586	40.28	1.275	32.39	M28X-1.0-6g-0.1R
21	1.711	43.46	1.401	35.59	M31X-1.0-6g-0.1R
23	1.836	46.63	1.527	38.79	M34X-1.0-6g-0.1R
25	1.964	48.61	1.649	41.88	M37X-1.0-6g-0.1R



Shell Size	D Boss		E		F		G		H	
	Dia. Max.		Dia. Max.		Dia. Max.		Dia. Max.		Dia. Max.	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
11	0.793	20.14	0.509	12.93	1.035	26.29	0.625	15.88	1.106	28.09
13	0.919	23.34	0.634	16.1	1.161	29.49	0.75	19.05	1.232	31.29
15	1.044	26.52	0.759	19.28	1.297	32.69	0.906	23.01	1.358	34.49
17	1.17	29.72	0.885	22.48	1.374	34.9	1.016	25.81	1.445	36.7
19	1.294	32.87	1.009	25.63	1.52	38.6	1.141	28.98	1.59	40.39
21	1.419	36.04	1.134	28.8	1.661	42.19	1.266	32.16	1.732	43.99
23	1.544	39.22	1.259	31.9	1.827	46.41	1.375	34.93	1.898	48.21
25	1.669	42.39	1.384	35.15	1.913	48.59	1.483	37.69	1.984	50.39



Shell Size	D Boss		E		J		S		T		V
	Dia. Max		Dia. Max.		Max.		Dia. Max.		Max.		
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	Thread Metric
11	0.793	20.140	0.509	12.930	0.793	20.140	1.054	26.270	0.102	2.590	M15X1.0-6g-0.1R
13	0.919	23.340	0.634	16.190	0.919	23.340	1.226	31.140	0.102	2.590	M18X1.0-6g-0.1R
15	1.044	26.520	0.759	19.280	1.044	26.520	1.351	34.320	0.102	2.590	M22X1.0-6g-0.1R
17	1.170	29.720	0.885	22.480	1.170	29.720	1.476	37.490	0.102	2.590	M25X1.0-6g-0.1R
19	1.294	32.870	1.009	25.630	1.294	32.870	1.586	40.280	0.102	2.590	M28X1.0-6g-0.1R
21	1.419	36.040	1.134	28.800	1.419	36.040	1.711	43.460	0.133	3.380	M31X1.0-6g-0.1R
23	1.544	39.220	1.259	31.980	1.544	39.220	1.836	46.630	0.133	3.380	M34X1.0-6g-0.1R
25	1.699	42.390	1.384	35.150	1.669	42.390	1.964	49.890	0.133	3.380	M37X1.0-6g-0.1R

MIL-C-38999 - Insert Configurations

Shell Size – Insert Configuration				Service Rating	Total Contacts	Contact Size (Note 1)							
Series 1	Series 2	Series 3	Series 4			22D	22M	22	20	16	12	10	8
9-3	8-3	-	-	M	3			3					
9-6	8-6	-	-	M	6		6						
9-35	8-35	A35	-	M	6	6							
9-44	8-44	-	-	M	4		4						
9-98	8-98	A98	-	I	3			3					
11-2	10-2	-	-	I	2				2C				
11-4	10-4	-	-	I	4			4					
11-5	10-5	B5	B5	I	5			5					
11-6	-	-	-	I	6			6					
11-13	10-13	-	-	M	13		13						
11-35	10-35	B35	B35	M	13	13							
11-98	10-98	B98	-	I	6			6					
11-99	10-99	B99	B99	I	7			7					
13-3	12-3	-	-	II	3				3C				
13-4	12-4	C4	C4	I	4				4C				
13-8	12-8	C8	-	I	8			8					
13-22	12-22	-	-	M	22		22						
13-35	12-35	C35	C35	M	22	22							
13-98	12-98	C98	C98	I	10			10					
15-4	14-4	-	-	-	4				4C				
15-5	14-5	C5	D5	II	5				5C				
15-15	14-15	C15	-	I	15			14	1C				
15-18	14-19	D19	-	I	18			18					
15-19	14-19	D19	-	I	19			19					
15-35	14-35	D35	D35	M	37	37							
15-37	14-35	-	-	M	37		37						
15-68	14-68	-	-	I	8				8C				
15-97	14-97	D97	D97	I	12			8	4C				
17-6	16-6	E6	E5	I	6				6C				
17-8	16-8	E8	E8	II	8				8C				
	16-13	-	-	I	13				13C				
17-26	16-26	E26	E26	I	26			26					
17-35	16-35	E35	E35	M	55	55							
17-42	16-42	-	-	M	42		42						
17-55	16-55	-	-	M	55		55						
17-99	16-99	E99	-	I	23			21	2C				
19-11	18-11	F11	F11	II	11				11C				
19-18	-	-	-	M	18	14						4	
19-28	18-28	-	-	I	28			26	2C				
19-30	18-30	-	-	I	30			29	1C				
19-32	18-32	F32	F32	I	32			32					
19-35	18-35	F35	F35	M	66	66							
19-45	18-45	-	-	M	67	67							
19-53	18-53	-	-	M	53		53						
19-66	18-66	-	-	M	66		66						
19-67	18-67	-	-	M	67		67						
21-1	20-1	-	-	M	79		79						
21-2	20-2	-	-	M	65		65						
21-11	20-11	G11	G11	I	11				11C				
21-16	2-16	G16	G16	II	16				16C				
21-24	20-24	-	-	I	24			24					
21-25	20-25	-	-	I	25			25					
21-37	20-27	-	-	I	27			27					
21-35	20-35	G35	G35	M	79	79							
21-39	20-39	G39	-	I	39			37	2C				
21-41	20-41	G41	G41	I	41			41					
21-75	20-75	G75	-	M	4							4C	
21-79	20-79	-	-	-	19				17C			2C	
23-1	22-1	-	-	M	100		100						
23-2	22-2	-	-	M	85		85						
23-14	22-14	-	-	-	14					14C			
23-21	22-21	H21	H21	II	21				21C				
23-32	22-32	-	-	I	32			32					
23-34	22-34	-	-	I	34			34					
23-35	22-35	H35	H35	M	100	100							
23-36	22-36	-	-	I	16			36					
23-53	22-53	H53	H53	I	53			53					
23-55	22-55	H55	H55	I	55			55					
23-97	22-97	-	-	I	16				16				
23-66	22-99	-	-	II	11				11				
25-1	24-1	-	-	M	128		128						
25-2	24-2	-	-	M	100		100						
25-4	24-4	J4	J4	I	56			48	8C				
		J11	-	I	11			2			9		
25-19	24-19	J19	J19	I	19					19C			
25-20	-	-	-	I	30			10	13F	4C		3T	
25-24	24-24	J24	J24	I	24				12C	12C			
25-29	24-29	J29	J29	I	29				29C				
25-35	24-35	J35	J24	M	128	128							
	24-37	-	-	-	37				37C				
25-43	24-43	J43	-	I	43			23	20C				
25-46	24-46	J46	-	I	46			40	4C			2C	
25-61	24-61	J61	J61	I	61			61					

C Available as coax or standard contacts
F 2 size 16 contacts dedicated to fiber optics
T Triax contacts

MIL-C-38999 family connectors are supplied with crimp style contact
 Hermetic MIL-C-38999 connectors are supplied with solder pot contact only.

Note: All above insert configurations conform to MIL-STD-1560

Contact Ratings

Contact Size	Test Current		Maximum Milli Volt Drop		
	Standard	Hermetic	Crimp	Solder	
				Std	Hermetic
22M	3	2	30	20	60
22D	5		40		
22	5	3	40	20	85
20	7.5	5	35	20	60
16	13	10	25	20	85
12	23	17	25		85

Service Ratings

Service Rating	Suggested Operating Voltage (Sea Level)		Test Voltage			
	AC (rms)	DC	Sea Level	50.000 FT.	70.000 FT.	110.000 FT
M	400	550	1300 VRMS	550 VRMS	350 VRMS	200 VRMS
I	600	850	1800 VRMS	600 VRMS	400 VRMS	200 VRMS
M	900	1250	2300 VRMS	800 VRMS	500 VRMS	200 VRMS

Contact Identification

MIL-C-39029 BIN Codes

Example -463 Wide Yellow / Blue / Orange
First Number "4" Wide Colour band at Wire End

Code No.	Colour
0	Black
1	Brown
2	Red
3	Orange
4	Yellow

Code No.	Colour
5	Green
6	Blue
7	Violet
8	Grey

BIN Numbers are read from the Wire attachment end towards the contact.
 The first band is wider than the other two for easy identification.

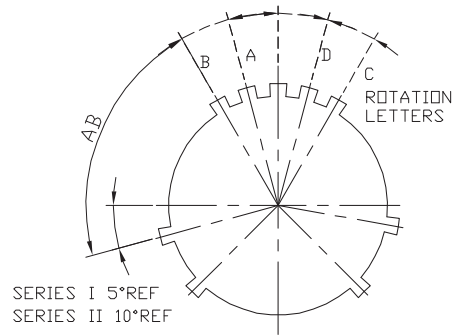


MIL-C-38999 Series 4

Alternative Keyway Positions

A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The angle for a give connector is the same whether the connector contains either Pin or Socket contacts. Inserts are not rotated in conjunction with the master key or keyway.

The diagrams below show the view from the front face of the connector. You will find that the keyway angle for the plug and the receptacle are exactly the same with the exception that the direction of the rotation is opposite to allow the connectors to mate.



RELATIVE POSSIBLE POSITION OF ROTATED MASTER KEYWAY (FRONT FACE OF RECEPTACLE SHOWN)

MIL-C-38999 Series 1 Master Keyways Positions

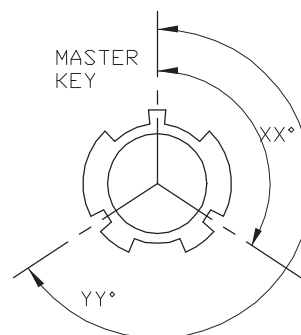
Shell Size	ANGLE OF ROTATION (Degrees)				
	Normal	A	B	C	D
9	95°	77°			113°
11	95°	81°	67°	123°	109°
13	95°	75°	63°	127°	115°
15	95°	74°	61°	129°	116°
17	95°	77°	65°	125°	113°
19	95°	77°	65°	125°	113°
21	95°	77°	65°	125°	113°
23	95°	80°	69°	121°	110°
25	95°	80°	69°	121°	110°

MIL-C-38999 Series 2 Master Keyways Positions

Shell Size	ANGLE OF ROTATION (Degrees)				
	Normal	A	B	C	D
8	100°	82°			118°
10	100°	86°	72°	128°	114°
12	100°	80°	68°	132°	120°
14	100°	79°	66°	134°	121°
16	100°	82°	70°	130°	118°
18	100°	82°	70°	130°	118°
20	100°	82°	70°	130°	118°
22	100°	85°	74°	126°	115°
24	100°	85°	74°	126°	110°

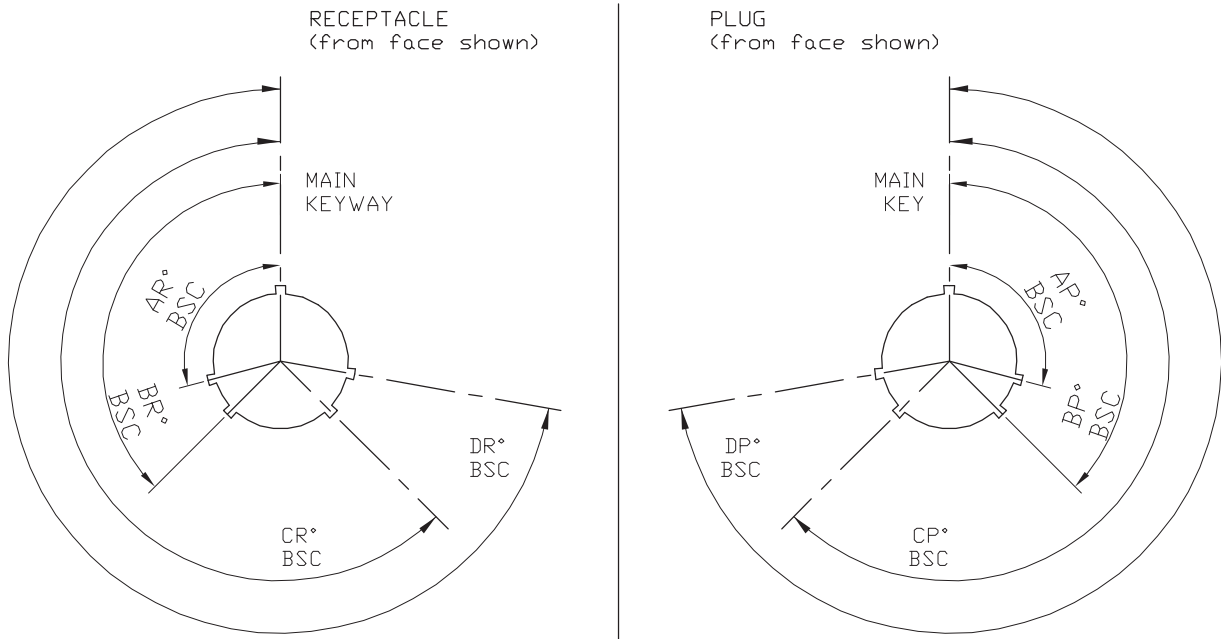
MIL-C-38999 Series 4 Master Keyway Positions

Keyway Positions	XX°	YY°
N	110°	250°
A	100°	260°
B	90°	270°
C	80°	280°
D	70°	290°



FACE OF RECEPTACLE SHOWN
ANGLE FOR THE PLUG IS OPPOSITE

MIL-C-38999 Series 3 Master Keyway Positions



Shell Size	Keyway Arrangement Letter Reference	AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC
9	N	105°	140°	215°	265°
	A	102°	132°	248°	320°
	B	80°	118°	230°	312°
	C	35°	140°	205°	275°
	D	64°	155°	234°	304°
11, 13 & 15	E	91°	131°	197°	240°
	N	95°	141°	208°	236°
	A	113°	156°	182°	292°
	B	90°	145°	195°	252°
	C	53°	156°	220°	255°
17 & 19	D	119°	146°	179°	298°
	E	51°	141°	184°	242°
	N	80°	142°	196°	293°
	A	135°	170°	200°	310°
	B	49°	169°	200°	244°
21, 23 & 25	C	66°	140°	200°	257°
	D	62°	145°	180°	280°
	E	79°	153°	197°	272°
	N	80°	142°	196°	293°
	A	135°	170°	200°	310°
	B	49°	169°	200°	244°
	C	66°	140°	200°	257°
	D	62°	145°	180°	280°
	E	79°	153°	197°	272°



MIL-C-38999 Pins, Sockets & Tooling

D38999 Series 1

Contact Size	Wire Range	Socket Contact	Pin Contact	Crimp Tool	Die/ Positioner	Extraction Tool	Insertion Tool
22D	22-28	M39029/56-348 Orange/Yellow/Grey	M39029/58-360 Orange/Blue/Black	M22520/2-01 or M22520/7-01	M22520/2-07 or M22520/7-05	M81969/14-01 or M81969/8-02	M81969/14-01 or M81969/8-01
22M	24-28	M39029/56-349 Orange/Yellow/White	M39029/58-361 Orange/Blue/Brown	M22520/2-01 or M22520/7-01	M22520/2-07 or M22520/7-05	M81969/14-01 or M81969/8-02	M8196/14-01 or M81969/8-01
22	22-26	M39029/56-350 Orange/Green/Black	M39029/58-362 Orange/Blue/Red	M22520/2-01 or M22520/7-01	M22520/2-07 or M22520/7-05	M81969/8-04	M81969/8-03
20	20-24	M39029/56-351 Orange/Green/Brown	M39029/58-363 Orange/Blue/Orange	M22520/1-01 or M22520/2-01	M22520/1-04 Red M22520/2-10	M81969/14-02 or M81969/8-06	M81969/14-02 or M81969/8-05
16	16-20	M39029/56-352 Orange/Green/Red	M39029-58-364 Orange/Blue/Yellow	M22520/1-01 or M22520/7-01	M22520/1-04 Blue M22520/7-04	M81969/14-03 or M81969/8-08	M81969/14-03 or M81969/8-07
12	12-14	M39029/56-353 Orange/Green/Orange	M39029-58-365 Orange/Blue/Green	M22520/1-01	M22520/1-04 Yellow	M81969/14-04 or M81969/8-10	M81969/14-04 or M81969/8-09

D38999 Series 2

Contact Size	Wire Range	Socket Contact	Pin Contact	Crimp Tool	Die/ Positioner	Extraction Tool	Insertion Tool
22D	22-28	M39029/57-354 Orange/Green/Yellow	M39029/58-360 Orange/Blue/Black	M22520/2-01 or M22520/7-01	M22520/2-06 or M22520/7-06	Not available	Not available
22M	24-28	M39029/57-355 Orange/Green/Green	M39029/58-361 Orange/Blue/Brown	M22520/2-01 or M22520/7-01	M22520/2-06 or M22520/7-06	Not available	Not available
22	22-26	M39029/57-356 Orange/Blue/Blue	M39029/58-362 Orange/Blue/Red	M22520/2-01 or M22520/7-01	M22520/2-06 or M22520/7-06	M81969/14-01 Plastic	M81969/14-01 Plastic
20	20-24	M39029/57-357 Orange/Green/Violet	M39029/58-363 Orange/Blue/Orange	M22520/1-01 or M22520/2-01	M22520/1-04 Red M22520/2-10	M81969/14-02 Plastic	M81969/14-02 Plastic
16	16-20	M39029/57-358 Orange/Green/Gray	M39029/58-364 Orange/Blue/Yellow	M22520/1-01 or M22520/7-01	M22520/1-04 Blue M22520/7-04	M81969/14-03 Plastic	M81969/14-03 Plastic
12	12-14	M39029/57-359 Orange/Green/White	M39029/58-365 Orange/Blue/Green	M22520/1-01	M22520/1-04 Yellow	M81969/14-04 or M81969/8-10	M81969/14-04 or M81969/8-09

D38999 Series 3 & 4

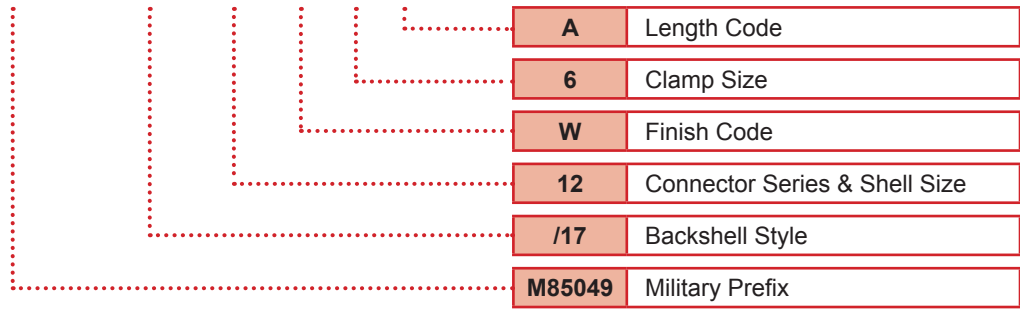
Other contact types are available such as coaxial, shielded and wire wrap posts. Please contact us for further information.

Contact Size	Wire Range	Socket Contact	Pin Contact	Crimp Tool	Die/ Positioner	Extraction Tool	Insertion Tool
22D	22-28	M39029/56-348 Orange/Yellow/Grey	M39029/58-360 Orange/Blue/Black	M22520/2-01 or M22520/7-01	M22520/2-07 or M22520/7-05	M81969/14-01 or M81969/8-02	M81969/14-01 or M81969/8-01
22M	24-28	M39029/56-349 Orange/Yellow/White	M39029/58-361 Orange/Blue/Brown	M22520/2-01 or M22520/7-01	M22520/2-07 or M22520/7-05	M81969/14-01 or M81969/8-02	M8196/14-01 or M81969/8-01
22	22-26	M39029/56-350 Orange/Green/Black	M39029/58-362 Orange/Blue/Red	M22520/2-01 or M22520/7-01	M22520/2-07 or M22520/7-05	M81969/8-04	M81969/8-03
20	20-24	M39029/56-351 Orange/Green/Brown	M39029/58-363 Orange/Blue/Orange	M22520/1-01 or M22520/2-01	M22520/1-04 Red M22520/2-10	M81969/14-02 or M81969/8-06	M81969/14-02 or M81969/8-05
16	16-20	M39029/56-352 Orange/Green/Red	M39029-58-364 Orange/Blue/Yellow	M22520/1-01 or M22520/7-01	M22520/1-04 Blue M22520/7-04	M81969/14-03 or M81969/8-08	M81969/14-03 or M81969/8-07
12	12-14	M39029/56-353 Orange/Green/Orange	M39029-58-365 Orange/Blue/Green	M22520/1-01	M22520/1-04 Yellow	M81969/14-04 or M81969/8-10	M81969/14-04 or M81969/8-09

Straight Backshells

MIL-C-38999 Series 1 & 2

M85049 /17- 12 W 6 A



Code	Length ± 0.032"			Shell Sizes
	/17	/29	/36	
Blank	1.50	1.00	1.50	8 to 24
A	2.50	2.00	2.50	8 to 24
B	3.50	3.00	3.50	14 to 24
C	4.50	4.00	4.50	20 to 24

Code	Finish
N	Electroless Nickel
W	Olive Drab Cadmium, 500 hrs salt spray

Clamp Code	B Cable Range					
	/17		/29 & /36		Y	X
	Min	Max	Min	Max		
01	0.062	0.125	0.062	0.125	0.781	1.250
02	0.125	0.250	0.125	0.250	0.969	1.250
03	0.250	0.375	0.250	0.375	1.062	1.250
04	0.375	0.500	0.312	0.500	1.156	1.250
05	0.500	0.625	0.437	0.625	1.250	1.312
06	0.625	0.750	0.562	0.750	1.375	1.375
07	0.750	0.875	0.687	0.875	1.500	1.500
08	0.875	1.000	0.812	1.000	1.625	1.625
09	1.000	1.125	0.937	1.125	1.750	1.625
10	1.125	1.250	1.062	1.250	1.875	1.625
11	1.250	1.375	1.187	1.375	2.187	1.625
12	1.375	1.500	1.312	1.500	2.312	1.875

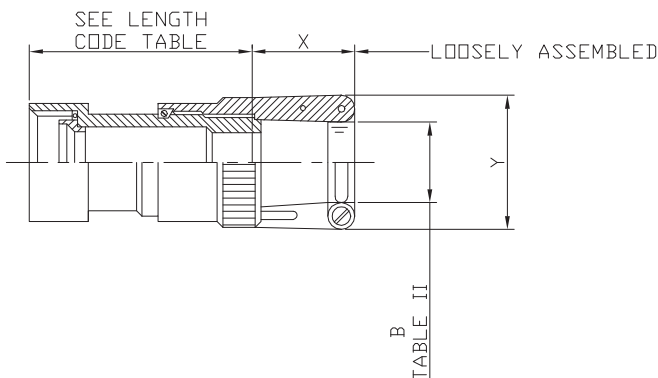
Code	Backshell Style
/17	Straight Cable Clamp Backshell
/29	Straight Non-Environmental Backshell
/36	Straight EMI/RFI Non-Environmental Backshell

Shell Code	Connector		Clamp Range	
	Series 1	Series 2	Min	Max
-08	9	8	01	02
-10	11	10	01	03
-12	13	12	02	04
-14	15	14	02	05
-16	17	16	02	06
-18	19	18	03	07
-20	21	20	03	08
-22	23	22	03	09
-24	25	24	04	10

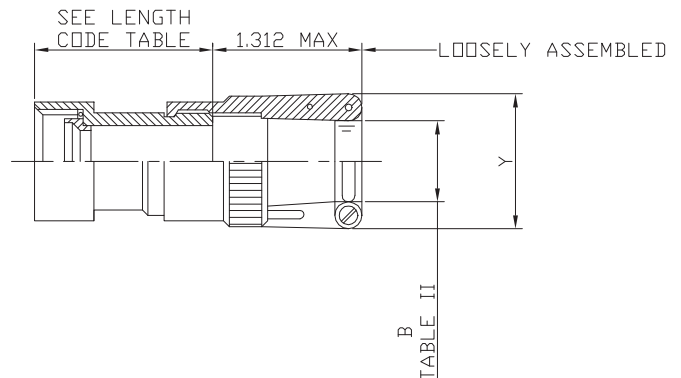
Code	Backshell Style
/17	Straight Cable Clamp Backshell
/29	Straight Non-Environmental Backshell
/36	Straight EMI/RFI Non-Environmental Backshell
MS	Military Prefix

* NOTE: Dimensions are imperial (inches)

M85049/17



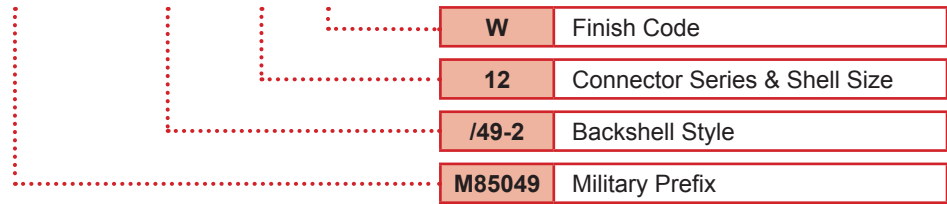
M85049/29 & 36



Strain Relief Backshells

MIL-C-38999 Series 1 & 2

M85049 /49-2 12 W



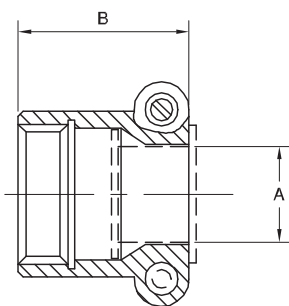
Code	Backshell Style
/49-2	Strain Relief Backshell

Code	Backshell Style
/17	Straight Cable Clamp Backshell
/29	Straight Non-Environmental Backshell
/36	Straight EMI/RFI Non-Environmental Backshell

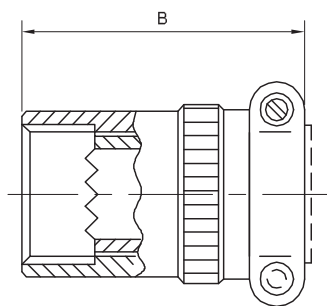
Shell Code	Connector Series		B Max		A*	C	D	E
	Series 1	Series 2	Series 1	Series 2	+0.010" -0.025"	Max.	Min.	Max.
-08	9	8	0.875	1.078	0.125	0.828	0.234	0.234
-10	11	10	0.875	1.078	0.188	0.891	0.297	0.297
-12	13	12	0.875	1.078	0.312	1.016	0.422	0.422
-14	15	14	1.125	1.312	0.375	1.141	0.547	0.547
-16	17	16	1.125	1.312	0.500	1.203	0.609	0.609
-18	19	18	1.125	1.312	0.625	1.469	0.734	0.734
-20	21	20	1.125	1.312	0.625	1.469	0.734	0.734
-22	23	22	1.250	1.453	0.750	1.656	0.922	0.922
-24	25	24	1.250	1.375	0.800	1.750	0.984	0.984

* When resilient bushing is used

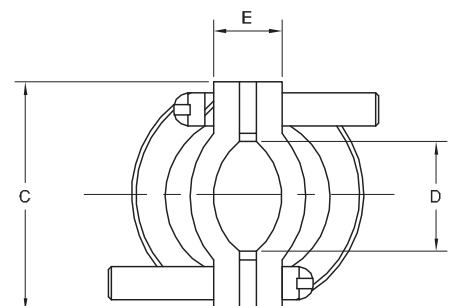
NOTE: Dimensions are imperial (inches)



SERIES I



SERIES II

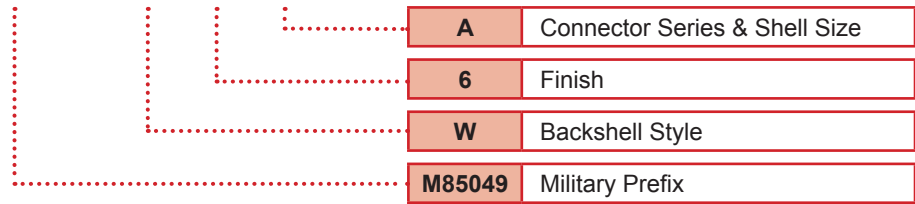


SERIES I & II

90° Strain Relief Backshells

MIL-C-38999 Series 1 & 2

M85049 /47 W 10



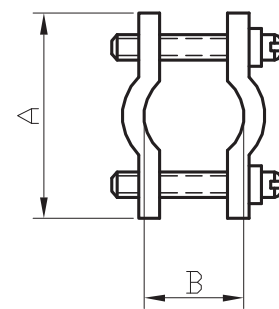
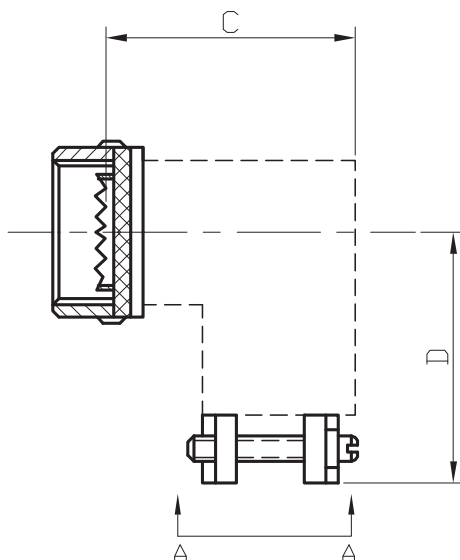
* NOTE: Dimensions are imperial (inches)

Code	Backshell Style
/47	90° Strain Relief Backshell

Code	Backshell Style
N	Electroless Nickel
W	Olive Drab Cadmium, 500 hrs salt spray

Shell Code	Connector Series	
	Series 1	Series 2
-08	9	8
-10	11	10
-12	13	12
-14	15	14
-16	17	16
-18	19	18
-20	21	20
-22	23	22
-24	25	24

A	B Cable Entry		C	D
	Max.	Min.		
0.828	0.082	0.234	1.156	1.000
0.891	0.082	0.234	1.156	1.031
1.016	0.114	0.328	1.234	1.094
1.141	0.176	0.457	1.406	1.219
1.255	0.238	0.634	1.578	1.281
1.469	0.208	0.614	1.594	1.344
1.550	0.302	0.698	1.672	1.375
1.675	0.302	0.823	1.812	1.438
1.800	0.332	0.969	1.922	1.719

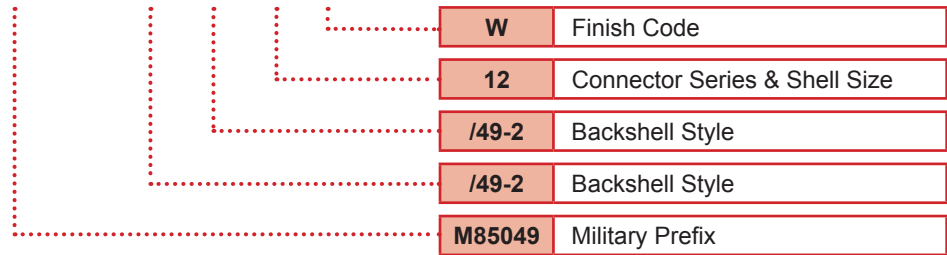


VIEW A-A

Dust Caps For Plugs & Receptacles

MIL-C-38999 Series 1 & 2

MS27501 B 13 C L



Code	Dust Cap Style
27501	Dust Cap for D38999 Series 1 PLUG
27502	Dust Cap for D38999 Series 1 RECEPTACLE
27510	Dust Cap for D38999 Series 2 PLUG
27511	Dust Cap for D38999 Series 2 RECEPTACLE

Code	Dust Cap Style
A	Cadmium, Bright
B	Cadmium, Olive Drab MIL-STD-1353
F	Electroless Nickel, MIL-STD-1353

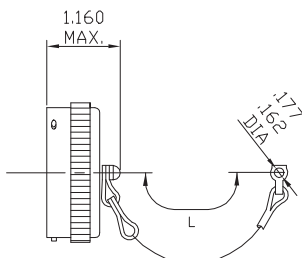
Code	Chain Style
A	Without Chain or Rope
C	With Chain
N	Chain and Ring (MS27502 & MS27511 Only)
R	Wire Rope (MS27511 Only)

Code	Chain Style
Blank	Standard Length - Table L NOM below
L	5.00" Chain
M	6.00" Chain (MS27501 Only)
N	7.00" Chain (MS27501 Only)

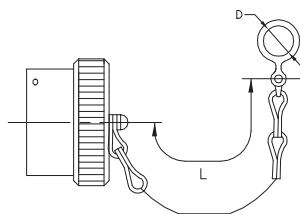
Shell Code	D38999 Series 1		Shell Code	D38999 Series 2		Part Code	Description
	D Min	L Nom		C Min	L Nom		
-09	0.70	3.00	-08	0.89	3.00	MS27501*A	0.947" Without Chain
-11	0.84	3.00	-10	1.01	3.00	MS27501*C	1.160" With Chain
-13	1.01	3.50	-12	1.14	3.50	MS27502*A	0.914" Without Chain
-15	1.14	3.50	-14	1.26	3.50	MS27502*C	1.100" With Chain
-17	1.26	3.50	-16	1.39	3.50	MS27510*A	0.617" Without Chain
-19	1.39	3.50	-18	1.51	3.50	MS27510*C	1.160" With Chain
-21	1.51	4.00	-20	1.64	4.00	MS27511*A	0.664" Without Chain
-23	1.64	4.00	-22	1.76	4.00	MS27511*C	0.820" With Chain
-25	1.76	4.00	-24	1.89	4.00		

* When resilient bushing is used

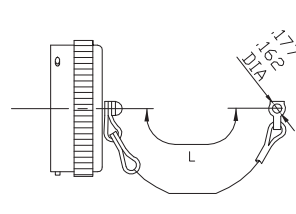
NOTE: Dimensions are imperial (inches)



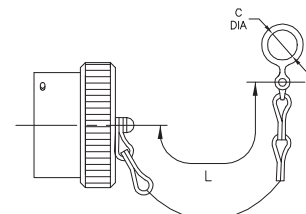
MS27501



MS27502



MS27510

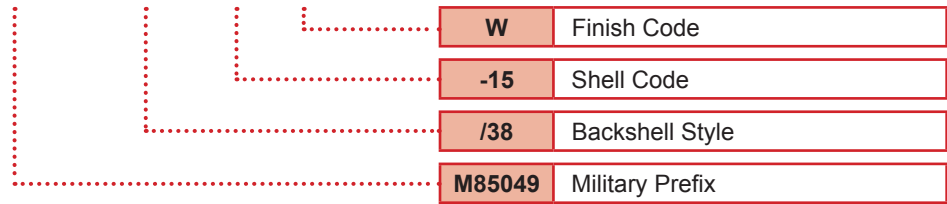


MS27511

Strain Relief Backshells

MIL-C-38999 Series 3 & 4

M85049 /38 -15 W

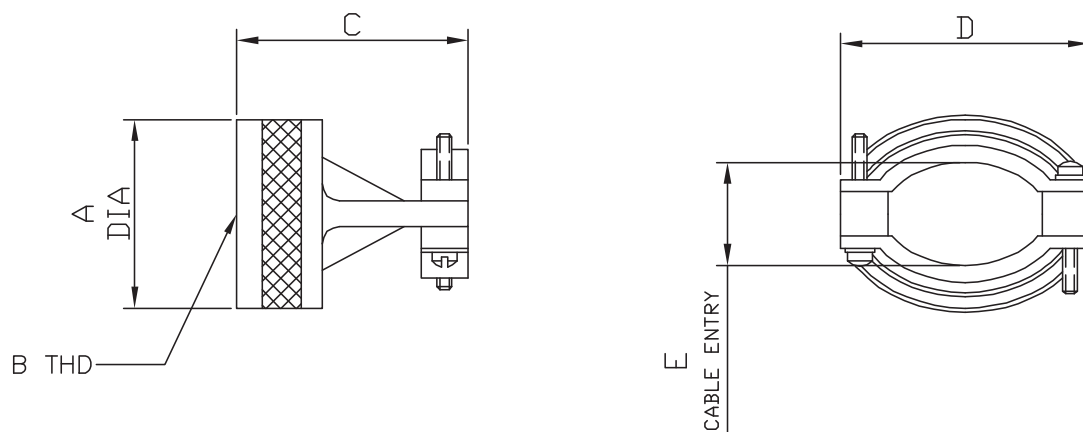


Code	Backshell Style
/38	Strain Relief Backshell

Code	Backshell Style
A	Black Anodise

Shell Code	Shell Ref.	A Max.	B Metric Thread RH Class 6H	C Max.	D Max.	E Cable Entry	
						Min.	Max.
-09	A	0.75	M12X1.00.100R	1.10	0.85	0.234	0.082
-11	B	0.85	M15X1.00.100R	1.10	0.90	0.234	0.082
-13	C	1.00	M18X1.00.100R	1.20	1.10	0.328	0.114
-15	D	1.10	M22X1.00.100R	1.25	1.15	0.457	0.176
-17	E	1.25	M25X1.00.100R	1.35	1.30	0.634	0.238
-19	F	1.40	M28X1.00.100R	1.60	1.50	0.614	0.208
-21	G	1.50	M31X1.00.100R	1.70	1.60	0.698	0.302
-23	H	1.65	M34X1.00.100R	1.85	1.70	0.823	0.302
-25	J	1.75	M37X1.00.100R	1.95	1.80	0.853	0.332

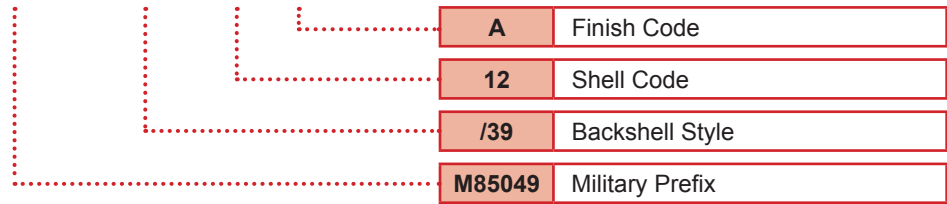
NOTE: Thread is a metric measurement, all other dimensions are imperial (inches)



90° Strain Relief Backshells

MIL-C-38999 Series 3 & 4

M85049 /39 -12 A

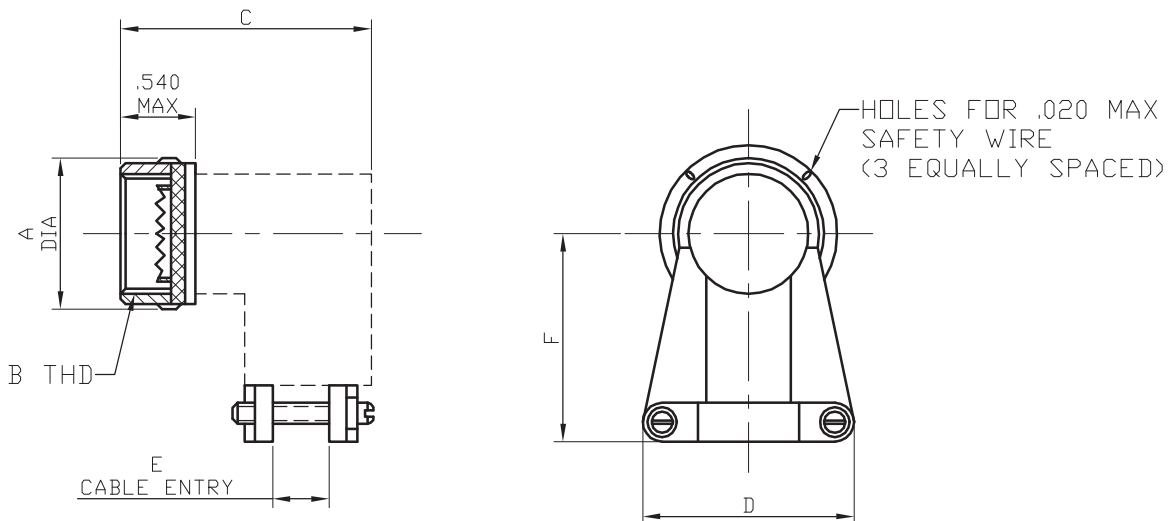


Code	Backshell Style
/39	90° Strain Relief Backshell

Code	Backshell Style
A	Black Anodise

Shell Code	Shell Ref.	A Max.	B Metric Thread RH Class 6H	C Max.	D Max.	E Cable Entry		F Max.
						Min.	Max.	
-09	A	0.75	M12X1.00.100R	1.20	0.85	0.234	0.082	1.00
-11	B	0.85	M15X1.00.100R	1.20	0.90	0.234	0.082	1.10
-13	C	1.00	M18X1.00.100R	1.40	1.10	0.328	0.114	1.10
-15	D	1.10	M22X1.00.100R	1.45	1.15	0.457	0.176	1.25
-17	E	1.25	M25X1.00.100R	1.60	1.30	0.634	0.238	1.30
-19	F	1.40	M28X1.00.100R	1.70	1.50	0.614	0.208	1.35
-21	G	1.50	M31X1.00.100R	1.85	1.60	0.698	0.302	1.60
-23	H	1.65	M34X1.00.100R	1.95	1.70	0.823	0.302	1.75
-25	J	1.75	M37X1.00.100R	2.10	1.80	0.853	0.332	1.85

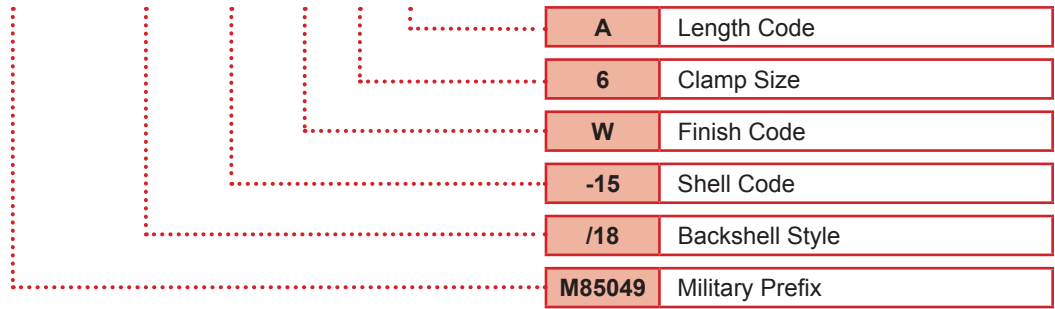
NOTE: Thread is a metric measurement, all other dimensions are imperial (inches)



Straight Backshells, EMI/RFI Environmental

MIL-C-38999 Series 3 & 4

M85049 /18 -15 W 6 A



* NOTE: Dimensions are imperial (inches)

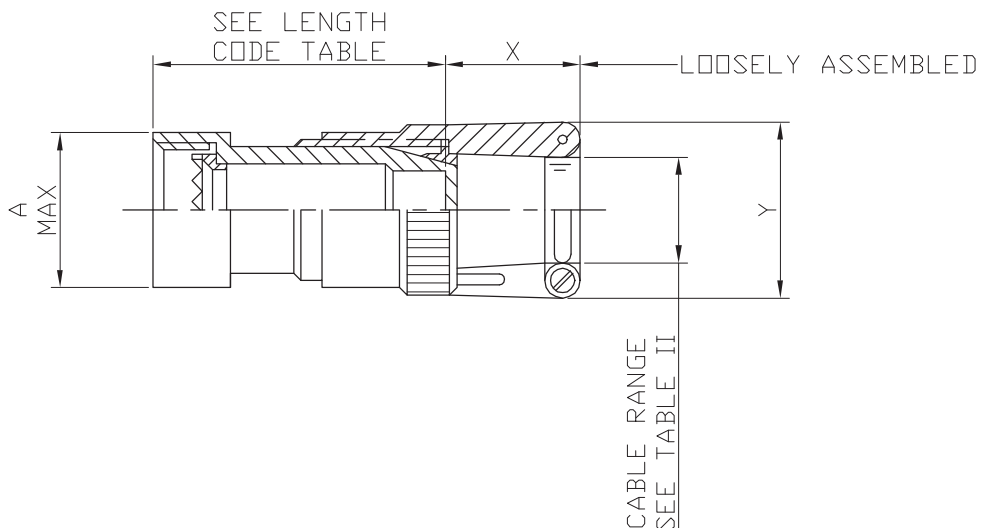
Code	Backshell Style
/18	Straight EMI/RFI Environmental Backshell

Code	Backshell Style
N	Electroless Nickel
S	Passivated Stainless Steel
W	Olive Drab Cadmium, 500 hrs salt spray

Code	Length ± 0.032"	Suitable for Shell Sizes
Blank	1.50	09 to 25
A	2.50	09 to 25
B	3.50	15 to 25
C	4.50	21 to 25

Shell Code	Cable Range		Table II	
	Min.	Max.	X	Y
01	0.062	0.125	1.250	0.781
02	0.125	0.250	1.250	0.969
03	0.250	0.375	1.250	1.062
04	0.375	0.500	1.250	1.156
05	0.500	0.625	1.312	1.250
06	0.625	0.750	1.375	1.375
07	0.750	0.875	1.500	1.500
08	0.875	1.000	1.625	1.625
09	1.000	1.125	1.625	1.750
10	1.125	1.250	1.625	1.875

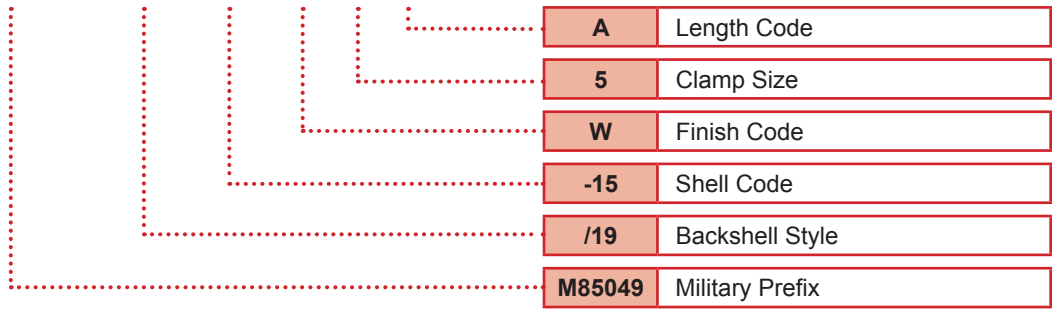
Shell Code	A Max.	Suitable for Clamp Sizes
-09	0.734	01 to 02
-11	0.840	01 to 03
-13	0.959	02 to 04
-15	1.091	02 to 05
-17	1.230	02 to 06
-19	1.368	03 to 07
-21	1.484	03 to 08
-23	1.602	03 to 09
-25	1.720	04 to 10



Straight Backshells, EMI/RFI, Non-Environmental

MIL-C-38999 Series 3 & 4

M85049 /19 -15 W 5 A



* NOTE: Dimensions are imperial (inches)

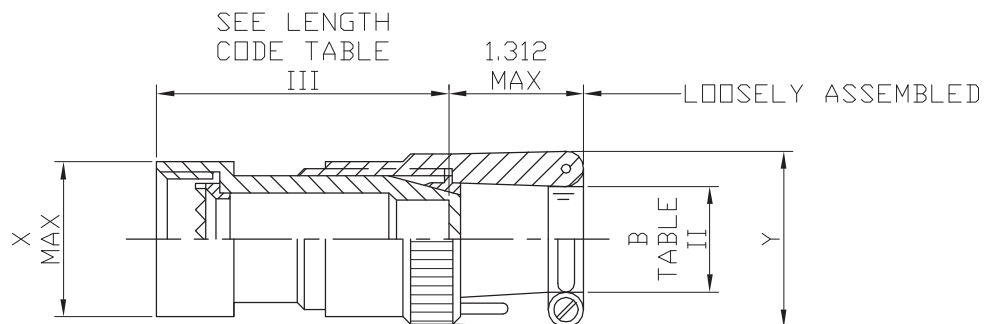
Code	Backshell Style
/19	Straight EMI/RFI Non-Environmental Backshell
/21	Straight Non-Environmental Backshell

Code	Backshell Style
N	Electroless Nickel
S	Passivated Stainless Steel
W	Olive Drab Cadmium, 500 hrs salt spray

Code	Table III Length ± 0.032"	Suitable for Shell Sizes
Blank	1.50	09 to 25
A	2.50	09 to 25
B	3.50	15 to 25
C	4.50	21 to 25

Clamp Size	B Cable Range Table I		Y Max.
	Min.	Max.	
01	0.062	0.125	0.781
02	0.125	0.250	0.969
03	0.250	0.375	1.062
04	0.375	0.500	1.156
05	0.500	0.625	1.250
06	0.625	0.750	1.375
07	0.750	0.875	1.500
08	0.875	1.000	1.625
09	1.000	1.125	1.750
10	1.125	1.250	1.875

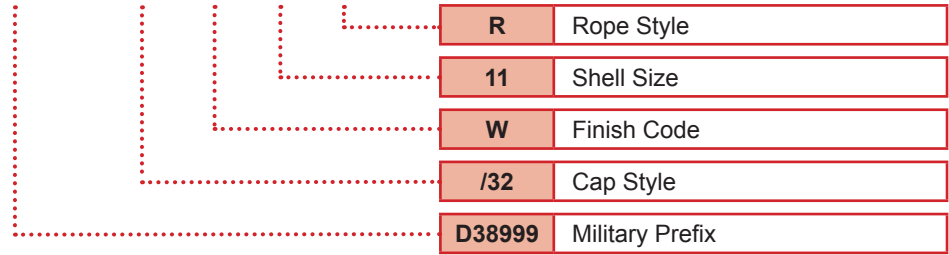
Shell Code	X Max.	Suitable for Clamp Sizes
-09	0.75	01 to 02
-11	0.85	01 to 03
-13	1.00	02 to 04
-15	1.10	02 to 05
-17	1.25	02 to 06
-19	1.40	03 to 07
-21	1.50	03 to 08
-23	1.65	03 to 09
-25	1.75	04 to 10



Dust Caps for Plugs & Receptacles

MIL-C-38999 Series 3

D38999 /32 W 11 R



Code	Dust Cap Style
/32	Dust Cap for D38999 Series 3 PLUG
/33	Dust Cap for D38999 Series 3 RECEPTACLE

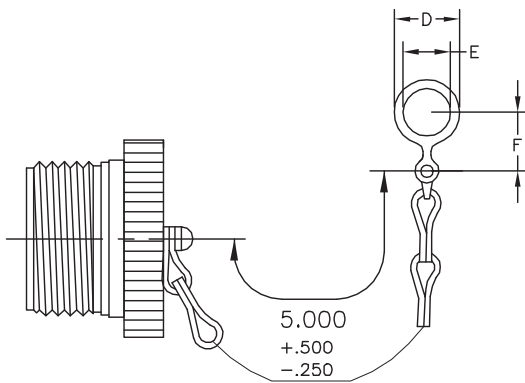
Code	Rope Style
N	Insulated Stainless Steel Rope with ring fitting for attachment between coupling nut & backshell
R	Insulated Stainless Steel Rope with fitting for screw

Material	
	Cap – Aluminium Alloy
	Rope – Stainless Steel
	Gasket – Silicone Rubber

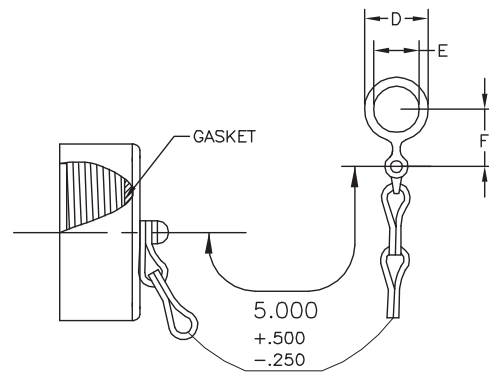
Code	Finish
W	Olive Drab Cadmium, 500 hrs salt spray

Shell Code	Military Shell Size Code	D38999/32				D38999/33			
		B Max.	D Max.	E Min.	F ± -0.25	B Max.	C Max.	D Min.	E ± -0.25
09	A	0.900	0.850	0.509	0.620	0.900	1.050	0.700	0.720
11	B	1.000	1.050	0.700	0.720	1.101	1.250	0.840	0.750
13	C	1.200	1.100	0.759	0.809	1.200	1.400	1.009	0.940
15	D	1.300	1.200	0.890	0.870	1.250	1.550	1.140	1.000
17	E	1.450	1.400	1.009	0.940	1.450	1.700	1.259	1.059
19	F	1.550	1.550	1.140	1.000	1.500	1.800	1.390	1.120
21	G	1.700	1.700	1.259	1.059	1.650	1.900	1.509	1.190
23	H	1.800	1.750	1.340	1.100	1.750	2.100	1.640	1.250
25	J	1.950	1.900	1.509	1.190	1.900	2.200	1.750	1.309

NOTE: Dimensions are imperial (inches)



D38999/32

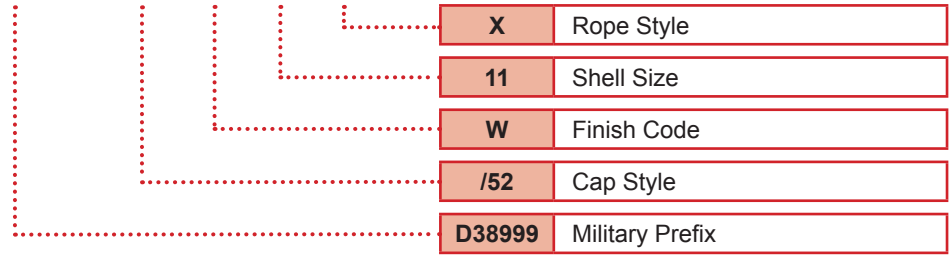


D38999/33

Dust Caps for Plugs & Receptacles

MIL-C-38999 Series 4

D38999 /52 W 11 X



Code	Rope Style
Blank	5" Stainless Steel Rope
X	5" Stainless Steel Rope, with Securing Ring

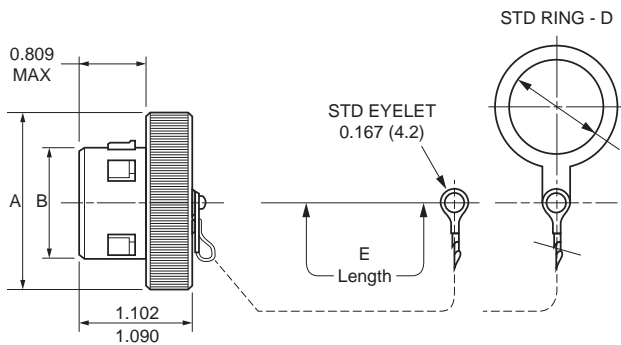
Code	Dust Cap Style
/51	Dust Cap for D38999 Series 4 PLUG
/52	Dust Cap for D38999 Series 4 RECEPTACLE

Material	
	Cap – Aluminium Alloy
	Rope – Stainless Steel
	Gasket – Silicone Rubber

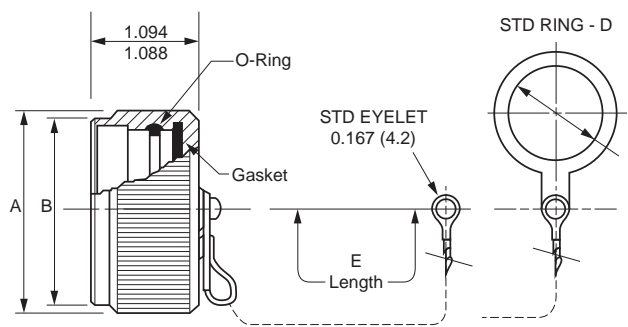
Code	Finish
W	Aluminium, Olive Drab Cad., over electroless nickel
E	Aluminium, with electroless nickel
P	Stainless Steel, Passivated

Shell Code	Military Shell Size Code	D38999/51				D38999/52			
		A Max.	B Max.	D Min.	E Length	A Max.	B Max.	D Min.	E Length
11	B	1.380	0.793	0.709	5.0	0.922	0.775	0.865	5.0
13	C	1.570	0.919	0.787	5.0	1.047	0.900	0.989	5.0
15	D	1.660	1.044	0.906	5.0	1.219	1.040	1.178	5.0
17	E	1.790	1.170	1.024	5.0	1.344	1.150	1.260	5.0
19	F	1.920	1.294	1.142	5.0	1.469	1.275	1.428	5.0
21	G	2.060	1.419	1.260	5.0	1.579	1.400	1.506	5.0
23	H	2.250	1.544	1.339	5.0	1.709	1.525	1.678	5.0
25	J	2.380	1.669	1.535	5.0	1.829	1.650	1.750	5.0

NOTE: Dimensions are imperial (inches)



D38999/51



D38999/52



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